THE
PEDAGOGICAL SEMINARY
Founded and Edited by G. STANLEY HALL

VOL. XVI JUNE, 1909 No. 2

THE GROWTH OF PHILIPPINE CHILDREN

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Child study to date has occupied itself almost exclusively with children of the white races, and anthropology has been concerned chiefly with adults. Both of these fields of research have become widely extended, but neither has yet seriously undertaken the study of the children of the various colored races. This remains an almost untouched field. If one wishes to obtain exact data with reference to the physical or mental capabilities of the children of any race other than the white, there is scarcely a study to which one can refer with confidence. In the writings of travellers, explorers, teachers, and missionaries, one finds numerous opinions as to the children. Anthropologists have in many cases made a few measurements and tests upon children, perhaps a half dozen in a tribe. The opinions, however, are too casual and conflicting, and the measurements too few and inexact as to age and other conditions, to be of great service in estimating either the physical or the mental efficiency of the children observed. The chief exceptions are a few studies made by the Japanese, and the recently-published elaborate study of Ales Hrdlicka upon the Indians of the Southwestern United States and Northern Mexico.

To take a concrete case illustrative of our uncertainty in this field, it is usually assumed and frequently asserted that the children of the Tropics develop more rapidly and mature earlier than the children of colder lands. It is at present difficult either to prove or to disprove the statement, owing to the dearth of exact statistical data.

The question arose, however, in a very practical way, in the Philippine Islands, in connection with the formulation of courses of study for the schools. In attempting to fit the stages of instruction to the stages of normal growth, the questions naturally arose as to what the normal growth-stages are, at what age each appears, and how long each continues, in the case of the Malay children of the Philippines.

Such questions were of practical importance. If the periods of development of Philippine children are fore-shortened, then the courses of instruction should be correspondingly fore-shortened; but if, on the other hand, their growth is as slow as that of European children, then for equal results they probably require courses of instruction of equal length.

In answer to the questions, there were no figures to which to appeal, and one could obtain from the teaching profession any sort of opinion that one might be looking for. The only method of finding out was to measure the children. This was undertaken, and the present study presents certain anthropometric evidence as to the rates and stages of their physical growth. This was naturally the first step to be taken even where the facts aimed at were the stages of mental growth and the age of mental maturity.

The children measured were students in various Manila schools,—the Philippine Normal School, Tondo primary schools, Tondo Secondary School, Sampaloc primary schools, and the Sampaloc Intermediate School. In the Philippine Normal School, about three-fourths of the students measured were from the provinces outside of Manila, chiefly those of southern and central Luzon. In the two intermediate schools, about half were from the provinces; and in the primary schools a considerable proportion were born outside of Manila. About all of the Christian provinces were represented; but the major portion of the students measured were Tagalog, Pampango, Pangasinan, and Ilocano.

One cannot say that the students measured were all of pure Malay blood, so widespread is the infusion of Spanish and Chinese blood in the archipelago. The most that can be said is that they were typical Filipinos, fair representatives of the Christian population of the archipelago. Measurements made on students that admitted themselves to be mestizos, or that gave unmistakable evidence in their appearance of the possession of Spanish or Chinese blood were discarded.

Besides determining growth-stages, a further aim of the study was to make a comparison of Philippine children with those of Europe or America in size and efficiency. In order that results might be entirely comparable, it was necessary to duplicate the methods and apparatus of some previous study

made on white children. Literature on the subject was exceedingly scarce in Manila, but I succeeded in finding a report of Director Smedley's work in the Child-Study Laboratory in Chicago, for the year 1899-1900, as published in the report of the Commissioner of Education for 1902. His study appeared to be a careful one, and both his methods and his apparatus were described in detail, verbally and graphically. In order to obain entirely comparable results, therefore, I duplicated his apparatus and used his methods. These are not here repeated since they can be found in his report.

The measurements taken were: (1) Height; (2) Span of arms; (3) Sitting height; (4) Weight; (5) Vital capacity; (6) Grip of right and left hands. Span of arms was not measured by Mr. Smedley, but comparable measures were found in Porter's study on St. Louis children. One of the most significant of Mr. Smedley's measurements, that of endurance as given by the ergograph, had to be omitted for lack of a duplicate instrument. This omission was unfortunate since, as may be seen later in this study, one is led to expect some rather surprising and perhaps quite favorable results. It is to be hoped that some one will be moved to carry through this portion of the study in the not distant future.

The measurements on each child were recorded on an individual card,—yellow cards being used for boys, and white for girls, to prevent any possibility of mixing data of the two sexes. On each card were also taken the child's name, date of birth, date of measurement, his age, name of the church where he had been baptized in order that the date of birth might be verified, native province, and the race of his father and mother.

One serious difficulty met with was obtaining the ages of the children. In a tropical climate, there is so little to mark the passage of time that the conception of a year is not at all well defined in the children's minds. They easily fail to keep track of their ages. Great effort had therefore to be made to obtain the true age. Of pupils born in the city of Manila, we verified the ages from the baptismal records in the churches. Also the ages given by a pupil to his teachers at different times were compared, and if he had given his age consistently for three or four times, it was considered evidence of correctness, but when he had given contradictory ages at different times, his statements had to be inquired into before his age could be determined. We impressed upon pupils the desirability of getting correct ages, and asked them to inquire of their parents so as to make no mistake. They are an extremely obliging people and they took an interest in the work ; so I have reason to believe that we obtained the true age in most cases. It re-

mains a source of some error, however, especially in the case of the younger pupils. In the case of students fourteen years old and over there is perhaps only very slight error in the matter of age. In verifying the ages of the younger pupils in the churches, it was found that when the age was given wrong, it varied upward from the true age about as often as downward, so that even if these errors had not been eliminated, they would not greatly have affected the median values. The errors that yet remain uneliminated are undoubtedly of this fluctuating sort, not seriously affecting median or average values where the number of pupils measured is considerable.

After rejecting those of questionable age and the mestizo class—those with some Spanish or Chinese blood—records remain of 1,180 boys and 438 girls from 6 to 21 years of age. The numbers are large enough to show the approximate curves of growth, though, especially in the upper and lower age-extremes, the numbers are too few for exactness. This is clearly indicated by the irregular angular nature of some of the curves, particularly those for girls where the numbers are far fewer than in the case of boys. Still it is believed that a greater number of observations would do little more than to smooth out the irregularities. The pupils measured were typical of their class.

The results of the measurements are shown in the following tables in the forms of medians, averages, variabilities, and yearly

Mean Measurements of Philippine Boys

Age	Number Cases	Stature	Span of Arms	Height Sitting	Weight	Grip Right	Grip Left	Vital Capacity
		Mm:	Mm:	Mm:	Kilos:	Kilos:	Kilos:	Cc:
6	6	1096	1050	605	18.0	12.0	11.5	950
7	18	1135	1120	620	18.8	15.2	14.2	1010
8	32	1170	1156	648	20.3	16.5	15.7	1130
9	41	1210	1188	664	21.3	17.4	16.8	1210
10	70	1247	1237	673	23.0	19.0	18.0	1290
11	63	1299	1298	698	25.8	21.2	19.6	1400
12	94	1360	1365	720	28.4	22.9	21.4	1570
13	87	1403	1423	741	31.1	25.0	23.8	1810
14	96	1471	1493	771	35.1	27.7	25.8	1950
15	130	1542	1581	812	41.4	35.1	31.8	2280
16	131	1582	1618	842	45.4	38.5	36.8	2570
17	145	1605	1649	851	47.0	41.0	37.9	2810
18	97	1609	1664	855	48.9	43.1	39.7	2860
19	68	1620	1674	862	51.2	44.1	42.9	2970
20	54	1622	1678	866	51.6	44.4	41.5	3070
21–5	48	1610	1666	861	51.3	43.5	40.0	3000

increments. If errors of age are entirely of a fluctuating character, it is possible that the medians may be less affected by this form of error than the averages. The differences, however, between the two are not great. The curves of growth shown in the charts are, with the exception of those dealing

Mean Measurements of Philippine Girls

Age	Number Cases	Stature	Span of Arms	Height Sitting	Weight	Grip Right	Grip Left	Vital Capacity
		Mm:	Mm:	Mm:	Kilos:	Kilos:	Kilos:	Cc:
7	4	1145	1115	620	19.0	13.0	12.0	1130
8	9	1175	1165	638	20.3	15.2	14.2	1130
9	15	1232	1235	657	22.8	18.1	16.8	1210
10	17	1273	1252	668	23.2	18.0	17.1	1260
11	27	1305	1293	690	26.5	20.5	18.6	1300
12	33	1381	1378	722	29.8	22.4	21.1	1510
13	24	1425	1430	758	33.5	26.2	24.5	1610
14	32	1455	1470	772	36.5	26.6	25.4	1740
15	68	1480	1506	788	40.0	29.5	27.3	1970
16	52	1488	1500	798	41.6	29.6	27.6	2000
17	54	1500	1534	803	43.4	30.3	28.3	2200
18	40	1495	1523	806	44.0	31.0	28.3	2100
19	27	1498	1523	810	42.8	30.5	28.0	2200
20–5	26	1486	1510	803	42.5	30.3	27.0	2030

Averages and Variabilities of Philippine Boys

Age	Height					Weight				
	Number Cases	Average	Standard Deviation	Annual Increm'nt	% of Increment	Number Cases	Average	Standard Deviation	Annual Increm'nt	% of Increment
		Mm:	Mm:	Mm:			Kilos:			
7	18	1148	47			18	18.9	2.1		
8	32	1191	63	43	3.7	31	20.8	2.8	1.9	10.1
9	41	1211	59	20	1.7	40	21.8	3.0	1.0	4.8
10	70	1252	40	41	3.4	70	23.4	2.1	1.6	7.3
11	63	1309	55	57	4.6	63	26.2	3.5	2.8	12.0
12	94	1366	78	57	4.4	94	29.5	5.4	3.3	12.6
13	89	1408	69	42	3.1	89	32.4	4.7	2.9	9.8
14	96	1461	81	53	3.8	96	35.9	6.2	3.5	10.8
15	130	1541	69	80	5.5	132	41.5	5.7	5.6	15.6
16	131	1585	52	46	3.0	131	45.9	5.0	4.4	10.6
17	145	1602	56	17	1.1	146	47.5	5.1	1.6	3.5
18	97	1612	56	10	0.6	97	49.8	5.4	2.3	4.8
19	68	1626	45	14	0.8	67	52.4	5.7	2.6	5.2
20	54	1622	52			51	51.7	5.1		
21–5	48	1621	54			47	51.7	4.9		

with annual increments, based upon median values. Curves based upon averages follow the same general lines; the differences are but slight.

All measurements are in terms of metric units. Age is that of the last birthday. Children called ten years of age in

Age	Span of Arms					Height Sitting				
	Number Cases	Average	Standard Deviation	Annual Increm'nt	% of Increment	Number Cases	Average	Standard Deviation	Annual Increm'nt	% of Increment
		Mm:	Mm:				Mm:	Mm:		
7	18	1128	58			18	623	21		
8	31	1169	69	41	3.6	31	647	30	24	3.8
9	41	1198	70	29	2.5	41	661	31	14	2.2
10	70	1244	49	46	3.8	70	673	21	12	1.8
11	62	1299	62	55	4.4	63	699	24	26	3.9
12	94	1371	86	72	5.5	94	719	40	20	2.9
13	89	1425	85	54	3.9	89	745	41	26	3.6
14	96	1480	93	55	3.9	96	770	49	25	3.4
15	131	1579	72	99	6.7	132	812	36	42	5.5
16	131	1621	63	42	2.6	131	841	32	29	3.6
17	145	1646	73	25	1.5	146	851	27	10	1.2
18	96	1656	68	10	0.6	97	859	29	8	0.9
19	63	1680	57	24	1.4	67	862	26	3	0.4
20	54	1676	56			51	866	22	4	0.5
21–5	48	1667	62			39	866	24		

Age	Grip of Right Hand					Grip of Left Hand				Vital Capacity			
	Number	Average	σ	Ann. Inc.	% Inc.	Average	σ	Ann. Inc.	% Inc.	Average	σ	Ann. Inc.	% Inc.
		Kg.				Kg.				Lit.			
7	18	14.8	2.6			14.1	2.3			1.02	.14		
8	31	17.0	3.2	2.2	14.9	15.7	3.2	1.6	10.4	1.14	.18	.12	11.8
9	40	17.6	3.0	0.6	3.5	16.8	2.6	1.1	7.0	1.22	.19	.08	7.4
10	70	18.9	2.1	1.3	7.4	18.0	2.5	1.2	7.1	1.31	.23	.09	7.0
11	63	21.3	3.5	2.4	12.7	19.9	3.2	1.9	10.6	1.50	.23	.19	14.5
12	92	23.9	5.2	2.6	12.2	22.4	4.8	2.5	12.6	1.62	.32	.12	8.0
13	89	25.8	4.6	1.9	8.0	24.4	4.3	2.0	8.9	1.80	.32	.18	11.1
14	93	28.2	6.1	2.4	9.3	26.4	5.7	2.0	8.2	1.98	.41	.18	10.0
15	132	35.1	7.5	6.9	24.5	32.3	7.1	5.9	22.4	2.35	.43	.37	18.7
16	130	38.8	6.5	3.7	10.6	36.6	6.1	4.3	13.3	2.59	.39	.24	10.2
17	143	41.7	6.4	2.9	7.5	38.6	6.4	2.0	5.5	1.80	.37	.21	8.1
18	95	43.5	7.2	1.8	4.3	40.5	7.2	1.9	4.9	2.91	.44	.11	3.9
19	67	44.6	7.2	1.1	2.5	42.1	6.9	1.6	4.0	3.01	.43	.10	3.4
20	50	45.6	7.3	1.0	2.2	42.7	6.7	0.6	1.4	3.06	.35	.05	1.7
21–5	39	43.5	5.9			40.0	5.5			2.97	.27		

the tables are therefore of all ages from ten to eleven, or on an average of about ten and a half years. It is believed that the usual error of this assumption as pointed out by Dr. Boas does not exist in the case of Philippine children, or at least did not when these measurements were made. The schools had been only recently established, the pupils were very indifferently graded, and classes were organized irrespective of age.

Averages and Variabilities of Philippine Girls

Age	Height					Weight				
	Number Cases	Average	Standard Deviation	Annual Increm'nt	% of Increment	Number Cases	Average	Standard Deviation	Annual Increm'nt	% of Increment
		Mm:	Mm:	Mm:			Kilos:			
7	4	1135	51			4	18.8	2.2		
8	9	1178	56	43	3.8	9	20.5	2.4	1.7	9.0
9	15	1228	54	50	4.2	15	22.7	2.8	2.2	10.8
10	17	1268	61	40	3.3	17	24.0	3.6	1.3	5.7
11	27	1295	57	27	2.1	27	26.6	3.6	2.6	10.8
12	33	1370	69	75	5.8	33	30.1	4.4	3.5	13.2
13	24	1428	51	58	4.2	24	35.0	6.1	4.9	16.3
14	42	1454	46	26	1.8	42	36.5	5.4	1.5	4.3
15	68	1480	52	26	1.8	68	40.3	4.7	3.8	10.4
16	52	1485	55	5	0.3	52	42.2	5.5	1.9	4.7
17	54	1503	51	18	1.2	54	44.5	6.8	2.3	5.5
18	40	1504	51	1	0.1	40	44.0	4.5		
19	27	1488	43			27	43.6	4.6		
20–5	26	1497	61			26	44.0	6.9		

Age	Span of Arms					Sitting Height				
	Number Cases	Average	Standard Deviation	Annual Increm'nt	% of Increment	Number Cases	Average	Standard Deviation	Annual Increm'nt	% of Increment
		Mm:	Mm:	Mm:			Mm:	Mm:	Mm:	
7	4	1103	64			4	615	32		
8	9	1160	64	57	5.2	9	643	39	28	4.6
9	15	1218	54	58	5.0	15	656	27	13	2.0
10	17	1235	80	35	2.9	17	677	26	21	3.2
11	27	1295	68	42	3.4	27	688	30	11	1.6
12	33	1380	76	85	6.5	33	723	38	35	5.1
13	24	1441	60	61	4.4	24	756	29	33	4.6
14	42	1461	57	20	1.4	42	770	33	14	1.9
15	68	1499	61	38	2.6	68	788	30	18	2.3
16	52	1505	71	6	0.4	52	795	27	7	0.9
17	54	1521	58	16	1.1	54	807	28	12	1.5
18	38	1514	54			40	808	28	1	0.1
19	27	1519	51			27	801	27		
20–5	26	1515	61			26	799	36		

Age	Grip of Right Hand					Grip of Left Hand				Vital Capacity			
	Number	Average	σ	Ann. Inc.	% Inc.	Average	σ	Ann. Inc.	% Inc.	Average	σ	Ann. Inc.	% Inc.
		Kg:				Kg:				Lit.			
7	4	12.5	2.5			12.3	2.9			1.00	.16		
8	9	15.0	2.3	2.5	20.0	14.5	2.0	2.2	17.9	1.10	.17	.10	10.0
9	15	18.0	3.0	3.0	20.0	16.7	3.6	2.2	15.2	1.20	.14	.10	9.1
10	17	18.3	3.2	0.3	1.7	17.1	3.1	0.4	2.4	1.28	.16	.08	6.7
11	27	19.9	3.3	1.6	8.7	19.0	3.1	1.9	11.1	1.33	.21	.05	3.9
12	33	22.0	4.0	2.1	10.6	20.9	3.6	1.9	10.0	1.52	.21	.19	14.3
13	24	25.7	3.8	3.7	16.8	24.0	3.0	3.1	14.8	1.62	.22	.10	6.6
14	43	25.7	4.8	0.0	0.0	24.3	4.4	0.3	1.3	1.76	.30	.14	8.6
15	68	29.2	4.4	3.5	13.6	27.0	4.4	2.7	11.1	1.99	.29	.23	13.1
16	52	29.9	3.4	0.7	2.4	27.6	3.6	0.6	2.2	2.02	.31	.03	1.5
17	54	30.7	4.1	0.8	2.7	28.2	4.5	0.6	2.2	2.15	.31	.13	6.4
18	40	30.3	4.1			28.5	4.4	0.3	1.1	2.13	.26		
19	27	30.3	4.3			27.9	4.6			2.18	.21		
20–5	26	30.6	4.7			27.4	4.2			2.03	.34		

Growth-Stages

Height. As in all studies made upon European and American children, there appear to be three clearly marked stages of growth in Philippine children: (1) The steady growth of childhood; (2) The accelerated growth of puberty; (3) The diminishing growth of the post-pubertal period.

The accelerated growth of puberty occurs in Philippine boys between the ages of thirteen and sixteen, with the greatest annual increment from fourteen to fifteen; in girls, between eleven and fourteen years, with the greatest annual increment from eleven to twelve. The acceleration begins and ends two years earlier with girls than with boys; the greatest annual increment, however, comes three years earlier with girls than with boys, coming in the earlier part of the pubescent growth of girls and in the later portion of that of boys.

After sixteen, boys grow slowly for four years more, growth extending to the age of twenty. Growth after seventeen is very slight, however, amounting to not more than two centimeters. The average of the 838 adult Filipinos measured by Dr. Folkmar, if his anthropomentric measurements can be relied upon, is on an exact level with that of the 145 seventeen-year-old boys recorded in this study. This does nor mean that Filipinos cease to grow at seventeen. It perhaps rather indicates slight differences in the samples of the population measured. The adults measured by Dr. Folkmar were inmates of Bilibid prison. He selected his 838 individuals out of a possible 3,000. It is possible that he rejected more of the mestizo

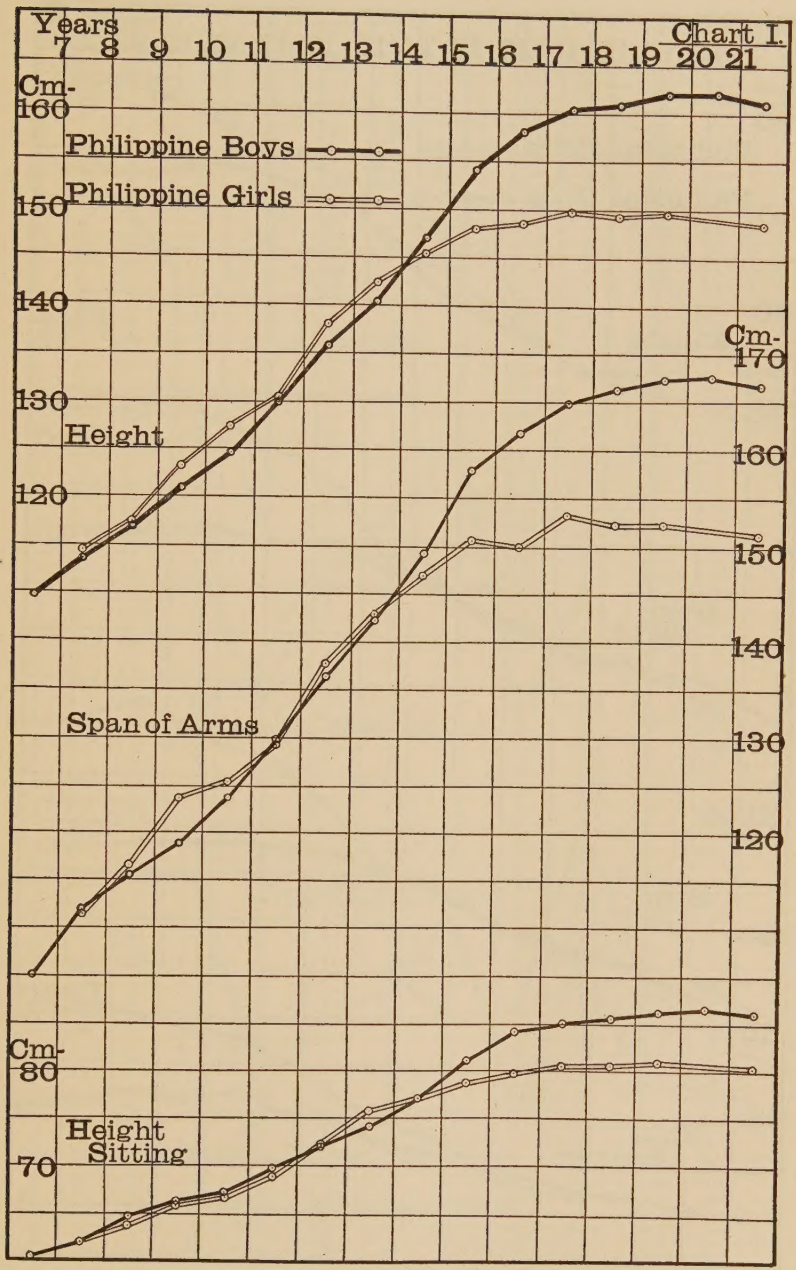

CHART I. Absolute Growth of Philippine Boys and Girls.

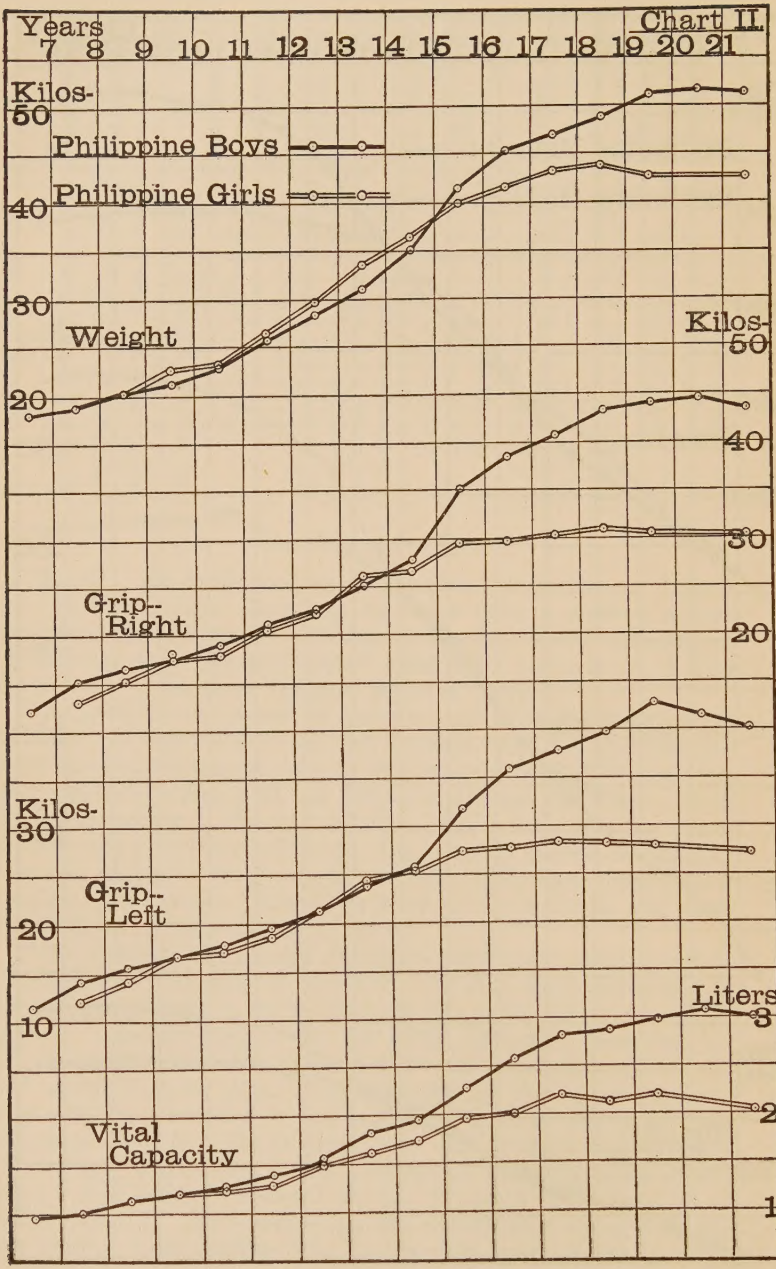

CHART II. Absolute growth of Philippine Boys and Girls.

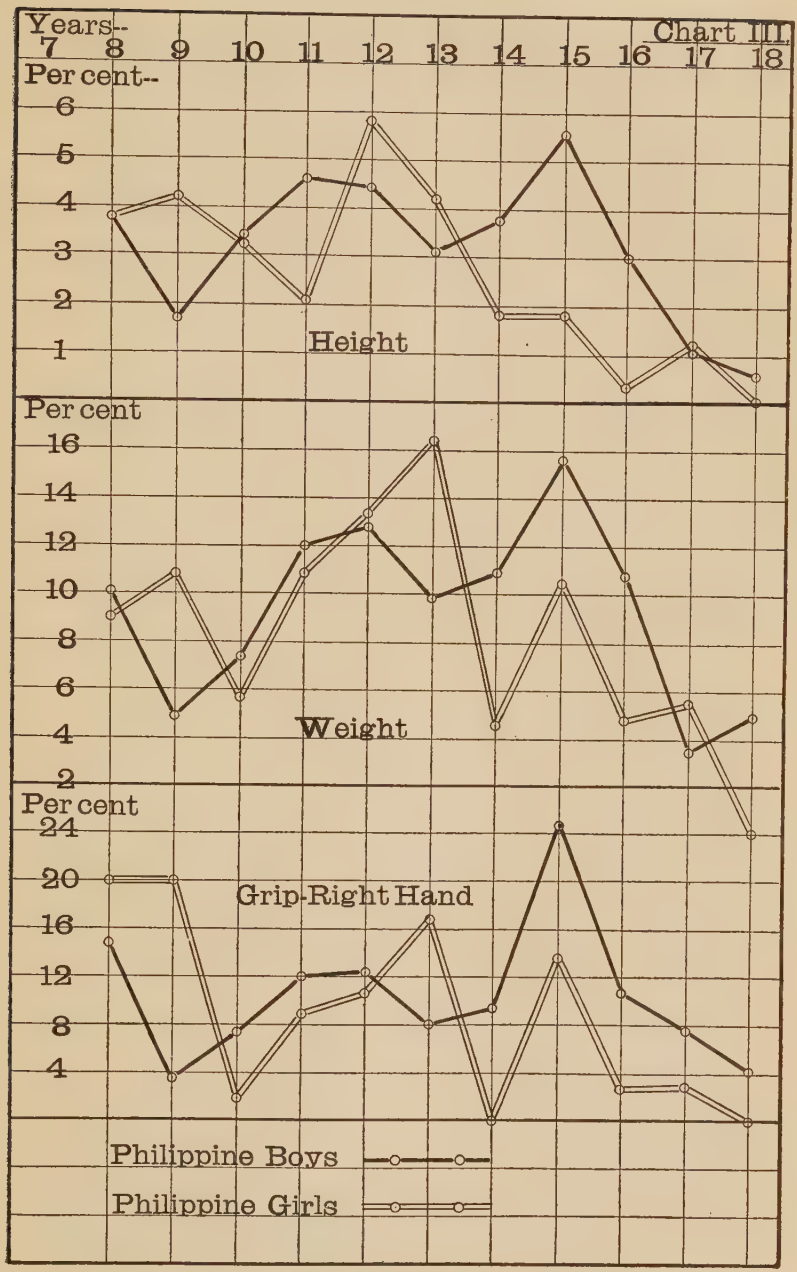

CHART III. Yearly Increments of Growth in Percents.

class than could be done in the case of our students, the marks of Spanish blood not being so evident in children; and also that the penal class were slightly under normal. On the other hand, our Manila schools, perhaps, contain a slightly larger proportion of mestizo blood than does the population in general. Yet after allowance is made for these things, the evidence is to the effect that Philippine boys on an average grow in height but little after seventeen years of age.

Philippine girls after the age of fourteen grow in height for three years more, or until the age of seventeen. At this age their height appears to be complete. In this respect, girls appear to attain complete maturity at least three years before boys.

As with Europeans, Philippine girls are taller than boys from eleven to fourteen. In the girls measured, height was greater than that of boys at all ages before fourteen, which differs from the studies on Europeans.

The stages of growth in absolute height for both boys and girls are shown graphically in Chart I; annual increments in Chart III.

Span of arms. The growth of the span of arms from finger-tip to finger-tip very nearly parallels that of stature, indicating the same stages of growth at the same ages. Girls again are slightly superior to boys until fourteen, after which they fall behind. Span of arms at the age of eight is about 98.5% of the stature for both boys and girls; at the age of twenty, it is about 103% of the stature with boys, and 102% with girls.

Curves of absolute growth are found on Chart I, of span of arms relative to stature on Charts VI and X.

Height Sitting. Since this is a measurement in one dimension of the vital organs of trunk and head, the limbs being totally excluded, it is, perhaps, a more significant measurement than stature or span of arms. In the curves of growth in sitting height given on Chart I, the three stages of growth are very clearly shown. In the growth of boys, these stages correspond exactly with those of stature; with girls, however, the post-pubertal growth appears to extend up to nineteen, or two years longer than in the case of stature. Although slight after seventeen, it is sufficient to be significant. The steady growth of boys from seventeen to twenty is more clearly shown than in the case of stature. In this dimension, girls are shorter than boys until twelve, taller between twelve and fourteen, and then again falling behind after fourteen. That girls should surpass boys in both stature and span of arms at all ages before twelve, but fall behind them in sitting height for the same period, seems to indicate a relatively greater length of limb in girls for this period. In the later post-pubertal period, this relation is reversed.

The relation of sitting height to stature is shown in Charts VI and X.

Weight. Weight was taken with clothing, but tropical clothing is very light in weight.

The stages of the growth in weight are synchronous in all important respects with growth in stature. Girls are absolutely heavier than boys from eight to fifteen. In relation to height, weight remains at all ages about equal for the two sexes, inclining slightly in favor of girls in the later adolescent period, as shown in the charts.

The adults of all ages measured by Dr. Folkmar were on an average three pounds heavier than the twenty-year adolescents measured in this study, yet the adults averaged two centimeters less in height. Taking both facts into consideration, we are led to believe that the weight of these twenty-year-old youths was not complete, and that growth in weight continues for some time after twenty. Like all peoples, they tend to fill out somewhat after maturity in height is reached.

Muscular Strength. Grip of right and left hands was taken by means of Smedley's adjustable dynamometer, manufactured by C. H. Stoelting & Co., of Chicago. The instrument was occasionally tested for accuracy as to the dial readings. In making the tests the distance between the bars was adjusted to the size of the pupil's hand, and he was permitted several trials, the best one being recorded.

The results as shown graphically in Chart II show boys and girls to be of about equal strength until the age of fourteen. After this age, the divergence is very striking, girls increasing in strength of grip less than four kilos, while boys increased about seventeen. In the individuals measured, girls reach their maximum at eighteen, and boys at twenty. One cannot be sure that growth in strength is complete at these ages, however, since the later measurements are too few, and the individuals of too special a class for the later results to be entirely trustworthy in this respect.

Growth in the strength of the left hand parallels that of the right at all stages in both sexes. Strength of the left hand differs from that of the right by from five to ten per cent. This difference, as in white children, is as great in girls as in boys, as shown in the tables, and in Charts VII and XI.

It is interesting to notice that boys of seven will grip eighty per cent. of their weight, and youths of eighteen, eighty-eight per cent. Girls of seven will grip seventy per cent. of their weight, and at eighteen the same. In relation to weight, the amount of strength that both boys and girls can put forth in a single muscular effort is surprisingly great, much greater indeed than that of the well-conditioned boys and girls

measured by Mr. Smedley. Whether the endurance of Filipinos is commensurate with their strength as shown in a single effort, or whether one is at the expense of the other is a question that cannot be answered until some one has undertaken a study of their muscular endurance.

Another interesting fact in this connection is the relatively great strength of Philippine girls as compared with Philippine boys. Dr. Christopher and Mr. Smedley show that among American children measured at Chicago "boys surpass the girls in strength at all ages; even in the kindergarten the average boy is stronger in his left hand than the average girl is in her right hand." This is not true of Philippine girls before the age of thirteen. At thirteen their strength is equal absolutely to that of boys, if not slightly greater; and from nine to fourteen the differences of the averages are very slight, in no case more than a single kilo.

Vital Capacity. Vital capacity was taken by means of a wet spirometer. Each pupil was permitted several attempts, and the best mark attained was recorded. Before nine years boys and girls show no appreciable difference in breathing capacity. From nine to twelve, boys slightly surpass girls. After twelve, the divergence increases, the difference becoming marked after fifteen. In this respect only do Philippine boys of thirteen surpass girls of the same age. This difference may be partly or even wholly due to the conditions of the test. Boys were more ready to lay aside their dignity and blow with sustained effort than were the girls; and it is possible that the girls were more hindered by their form of clothing.

General Conclusions. Philippine children show the three marked stages of development between the ages of six and twenty as clearly as do children of European descent; and the periods appear to be synchronous for the two races. The pubertal acceleration usually begins in Philippine boys at twelve or thirteen years and extends up to sixteen or seventeen. After this age growth seems to continue for three or four years longer. Whether or not there is growth after twenty cannot be determined from the data at hand.

With girls the period of pubertal acceleration falls between the ages of eleven and fourteen, arriving and ending some two or three years earlier than with boys. After fourteen, girls continue to grow for three or four years longer, reaching maturity at about seventeen or eighteen. The upper limit is not here indicated with certainty because of the insufficient number measured, and because the girls in the later years of the secondary school constitute a somewhat specialized type.

Philippine girls on an average seem to be about equal to Philippine boys at all ages before fourteen. Anatomically

they are superior to boys between eleven or twelve and fourteen or fifteen; functionally at this period in grip and vital capacity, they are slightly weaker relative to size, but about equal in absolute units. This comparison of boys and girls seems to be of value in indicating a great difference in the physiological age of the two sexes at this chronological period. It seems to show that at thirteen most girls are post-pubescent while most boys of that age remain pre-pubescent, a fact of practical importance in dealing with matters of coeducation recently introduced into Philippine schools.

A Comparison of the Growth of Philippine Children with White Children

A comparison of the children of the two races is best shown graphically, as in the Charts IV to XII. Curves showing the growth of American children are taken from the report of Mr. Smedley's work in the child-study laboratory at Chicago, with the exception of the curves showing annual increments of growth in height and weight which were calculated by Dr. Boas, and may be found in the *American Journal of Psychology*, Vol. IX, No. 3. Since the curves showing the growth of Filipinos were based upon median values, the medians also were employed in constructing the curves for American children. Perhaps averages may just as well have been used since the differences between the two are but slight.

Boys

Height. The curves of growth in height at the top of

Ratio of Height Sitting to Stature

Age	Boys			Girls	
	Filipino	American	Chinese	Filipina	American
7	·544	·560		·540	·550
8	·556	·553		·550	·545
9	·546	·543	·549	·542	·540
10	·536	·534	·552	·528	·534
11	·539	·533	·543	·527	·533
12	·530	·529	·541	·522	·532
13	·529	·517	·540	·532	·527
14	·524	·517	·528	·528	·529
15	·526	·522	·532	·539	·532
16	·532	·527	·521	·537	·535
17	·528	·533		·534	·532
18	·534	·532		·541	·538
19	·531	·527		·541	·538
20	·537	·532		·541	·538

Chart IV show a remarkable parallelism in the growth of Philippine and American boys. Both curves show the same general stages, falling within the same years. The pubertal acceleration falls within the same age-limits for both races. Before the age of fifteen the difference in the height of the two races remains about constant, Filipinos being on an average from six to eight centimeters shorter than Americans of the same ages. But after fifteen, the Philippine boy lags behind. He continues to grow up to twenty, and perhaps even beyond, but his late adolescent growth appears to lack the vigor shown

Ratio of Span of Arms to Stature

Age	Boys			Girls	
	Filipino	American	Chinese	Filipina	American
7	.987	1.003		.974	.995
8	.988	1.008		.992	1.000
9	.984	1.007	.976	1.000	1.000
10	.992	1.010	.985	.985	1.002
11	1.000	1.009	.985	.991	1.008
12	1.004	1.017	.993	.998	1.007
13	1.014	1.015	.986	1.003	1.005
14	1.014	1.018	1.000	1.010	1.012
15	1.025	1.023	1.025	1.018	1.009
16	1.023	1.023	1.030	1.015	1.007
17	1.028	1.021		1.023	1.021
18	1.033	1.029		1.020	1.013
19	1.034			1.017	1.018
20	1.035			1.017	1.001

Ratio of the Cube of Height to Weight

Age	Boys			Girls	
	Filipino	American	Chinese	Filipina	American
7	78.8	74.9		80.1	75.7
8	78.9	76.6		81.0	78.2
9	83.1	78.9	77.2	81.6	79.7
10	84.9	79.8	81.3	88.3	82.3
11	85.2	81.6	79.2	84.8	85.8
12	88.5	81.3	80.9	88.4	84.0
13	88.2	83.6	78.8	87.3	85.7
14	90.5	84.4	82.7	85.3	83.6
15	88.2	84.9	85.2	81.0	81.0
16	86.8	83.9		79.5	78.7
17	88.8	80.3		77.8	80.3
18	85.3	82.6		76.7	78.8
19	83.0	79.9		78.8	78.6
20	82.4	78.7		78.5	78.7

by that of the American boy. As compared with children of North-European descent, Filipinos suffer relative arrest in their physical growth after the age of fifteen. This relative failure of growth-vigor is shown in all the curves of Chart IV. The almost complete parallelism of growth up to fifteen and the subsequent divergence after this age is perhaps most clearly shown in sitting height, which is perhaps the most significant dimension measured.

Chart V shows the greatest annual growth-increment in

Ratio of Strength of Grip to Weight

Age	Boys			Girls	
	Filipino	American	Chinese	Filipina	American
7	.809	.511		.684	.507
8	.813	.532		.749	.505
9	.817	.558	.798	.794	.529
10	.826	.594	.782	.776	.537
11	.822	.612	.838	.774	.544
12	.806	.629	.796	.752	.554
13	.804	.653	.803	.783	.575
14	.790	.677	.773	.729	.566
15	.847	.712	.867	.737	.575
16	.848	.762	.880	.712	.576
17	.873	.772		.698	.589
18	.879	.776		.705	.596
19	.861	.811		.713	.614
20	.861	.815		.768	.623

Relation of Vital Capacity to Weight

Cc. per Kilo

Age	Boys			Girls	
	Filipino	American	Chinese	Filipina	American
7	56.9	54.7		56.4	51.6
8	55.6	55.6		55.7	50.9
9	56.8	55.2	54.7	53.1	51.7
10	55.8	56.0	54.8	54.3	50.9
11	54.3	55.9	54.5	49.0	50.8
12	55.2	55.4	53.7	50.7	47.7
13	58.1	56.7	54.3	48.0	46.9
14	55.6	55.6	55.7	47.7	45.8
15	54.9	55.9	53.1	49.2	45.9
16	56.5	59.5		48.1	45.1
17	59.9	60.6		50.7	46.1
18	58.5	60.4		47.8	46.8
19	57.8	59.4		51.2	48.0
20	59.5	59.3		49.0	48.2

Relation of Strength of Grip to Vital Capacity
Kilos per Liter

Age	Boys			Girls	
	Filipino	American	Chinese	Filipina	American
7	15.1	9.8		12.2	9.6
8	14.6	10.0		13.5	9.7
9	14.4	10.7	14.6	15.0	10.2
10	14.8	10.3	14.3	14.3	10.6
11	15.2	10.6	15.4	15.8	11.1
12	14.6	11.3	14.9	14.9	11.6
13	13.8	11.4	14.8	16.3	12.3
14	14.2	11.4	13.9	15.3	12.4
15	15.4	12.5	16.3	15.0	12.5
16	15.0	12.5	16.1	14.8	12.8
17	14.6	12.8		13.8	12.8
18	15 1	12.9		14.8	12.8
19	14.8	13.6		14.6	12.8
20	14.5	13.7		15.8	13.0

Ratio of Left Hand to Right Hand

Age	Boys			Girls	
	Filipino	American	Chinese	Filipina	American
7	.934	.948		.924	.944
8	.952	.933		.935	.940
9	.966	.942	.975	.928	.935
10	.947	.944	.975	.950	.935
11	.925	.940	.929	.907	.938
12	.935	.920	.971	.942	.940
13	.952	.920	.960	.935	.911
14	.932	.921	.950	.955	.920
15	.906	.929	.901	.926	.925
16	.956	.922		.933	.926
17	.925	.909		.934	.916
18	.921	.918		.913	.933
19	.973	.941		.918	.926
20	.935	.941		.891	.917

height to fall for both races between the ages of fourteen and fifteen. The growth-force during this period seems to be much more pronounced in the Filipino than in the American; but it seems to exhaust itself for him all the more quickly, as shown by the more precipitous fall of the curve after fifteen.

Weight. The curves of weight in Chart IV might seem to indicate that Philippine boys not only fall behind after fifteen, but that they were continually losing ground from the beginning; but such is not the case. The apparent divergence be-

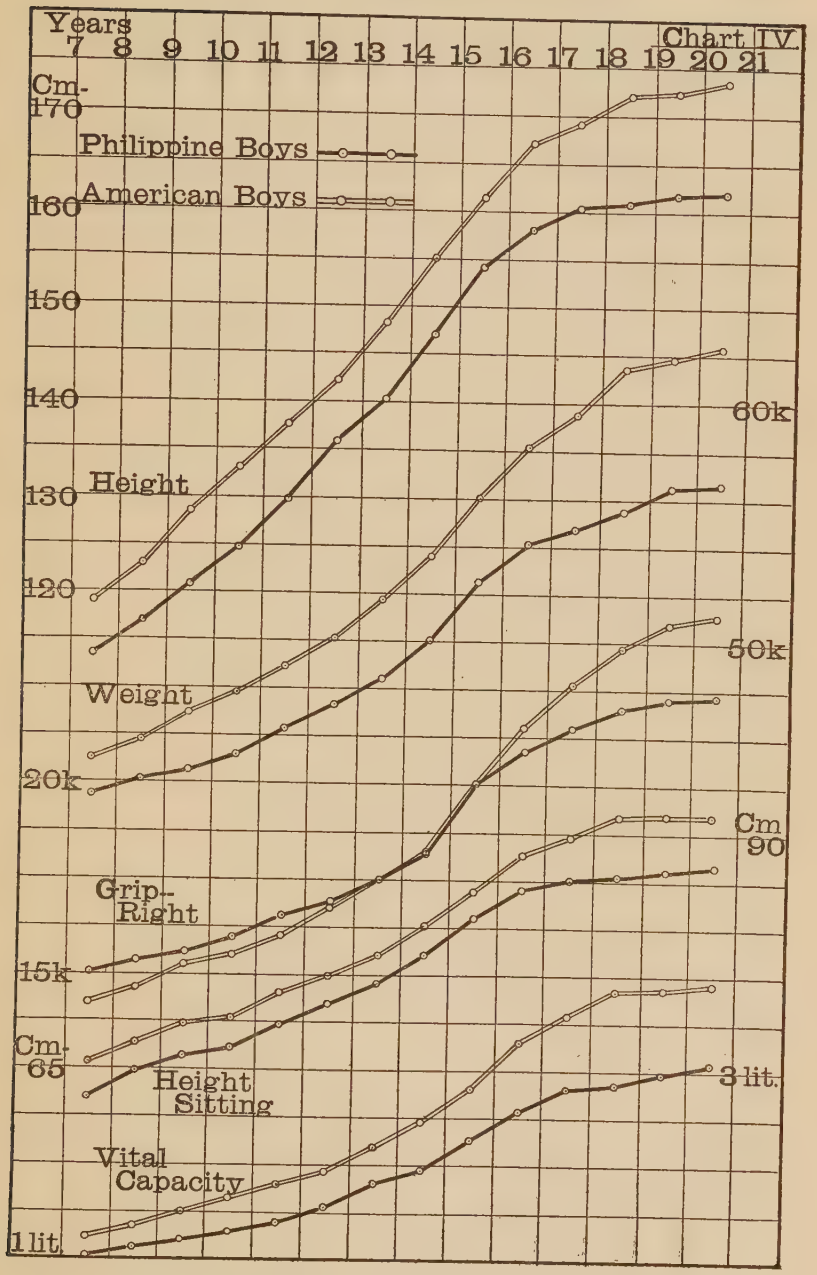

CHART IV. A Comparison of Philippine and American Boys in Absolute Growth.

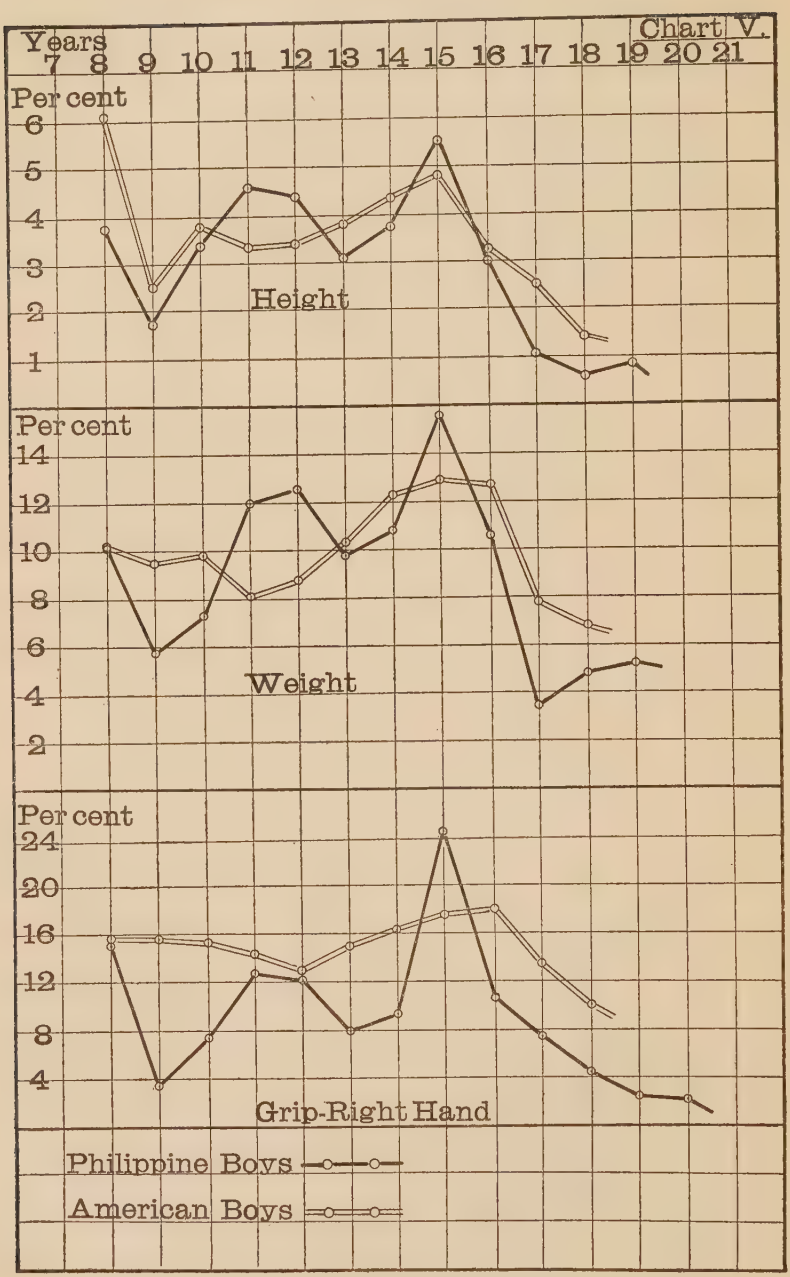

CHART V. A Comparison of the Annual Increments of Growth of Philippine and American Boys.

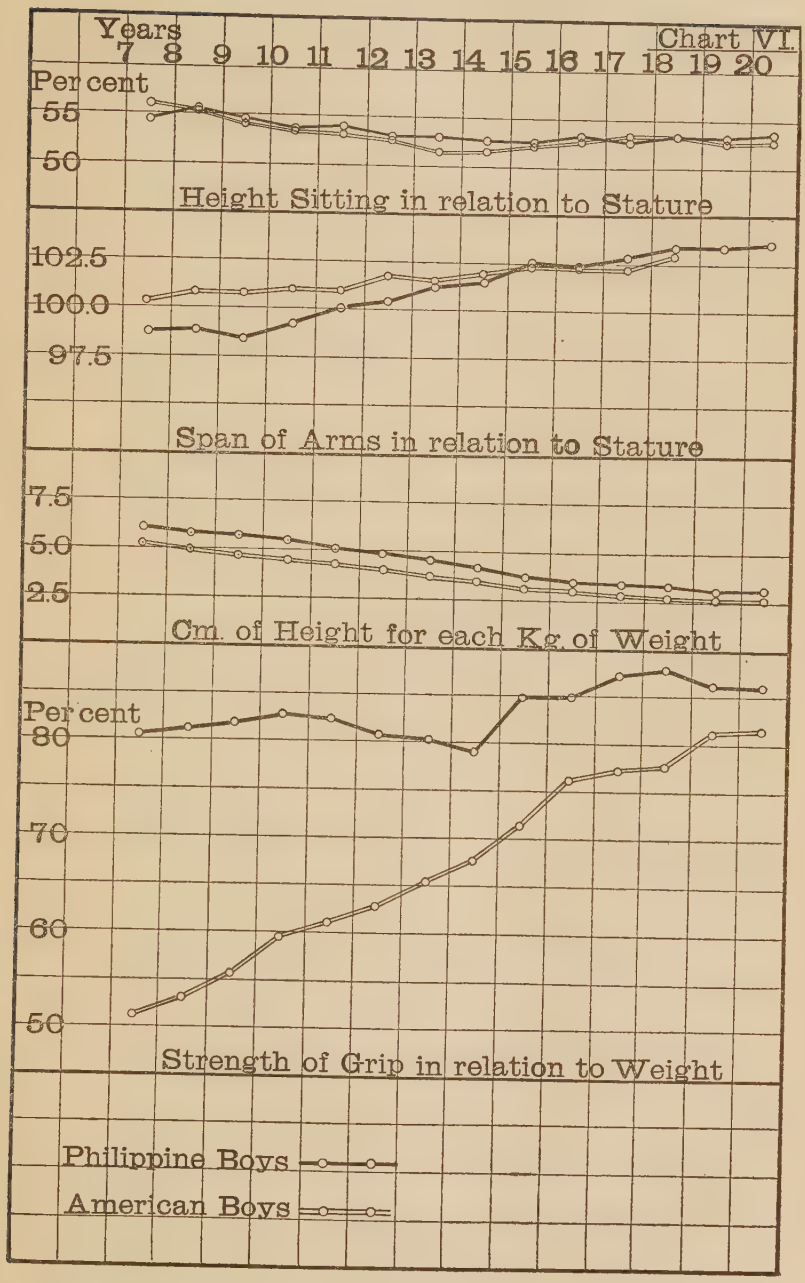

CHART VI. A Comparison of the Relative Growth of Philippine and American Boys.

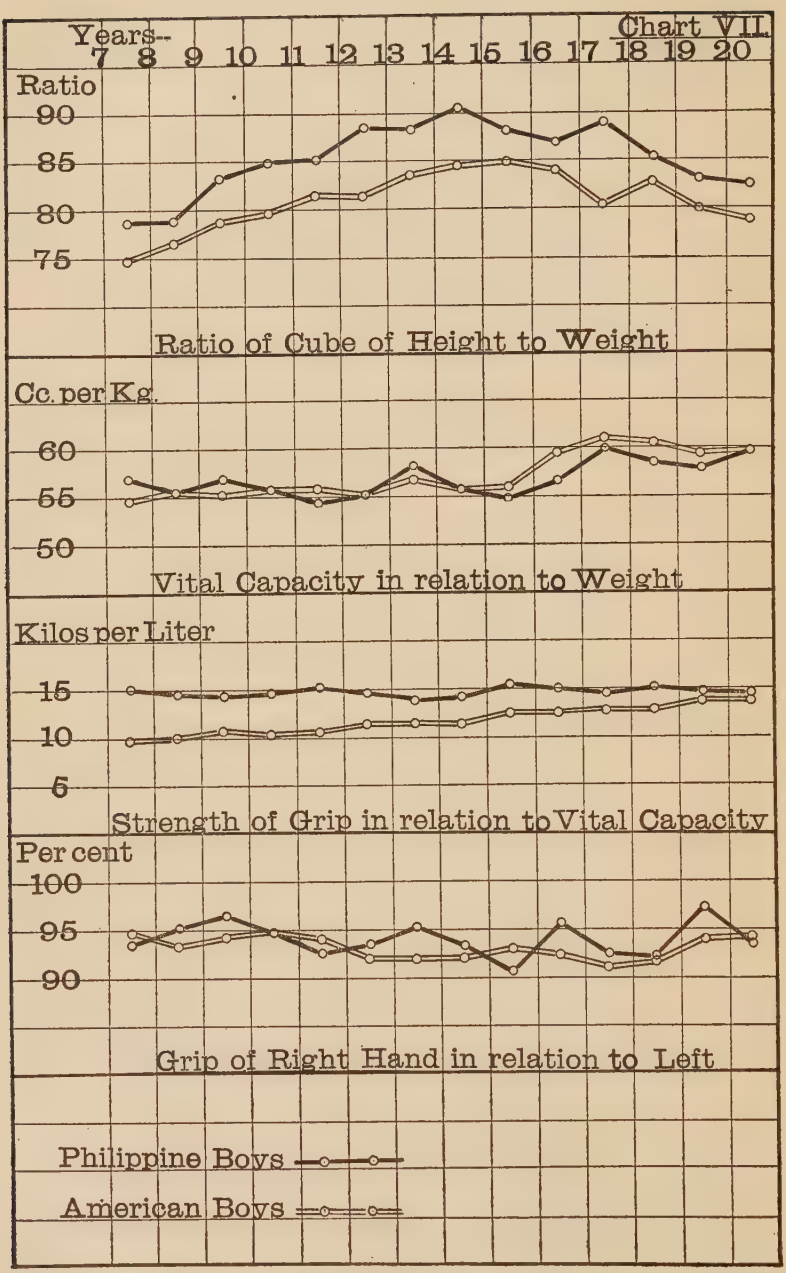

CHART VII. A Comparison of the Relative Growth of Philippine and American Boys.

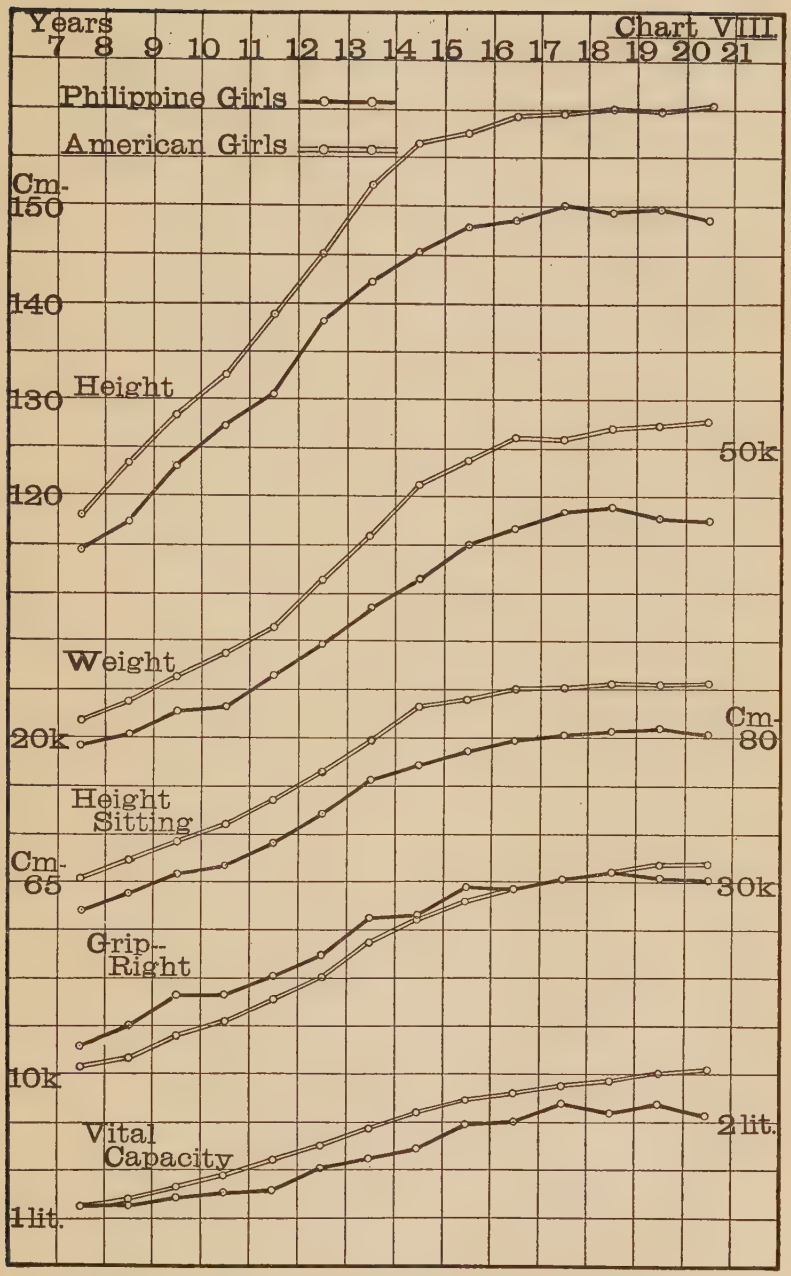

CHART VIII. A Comparison of Philippine and American Girls in Absolute Growth.

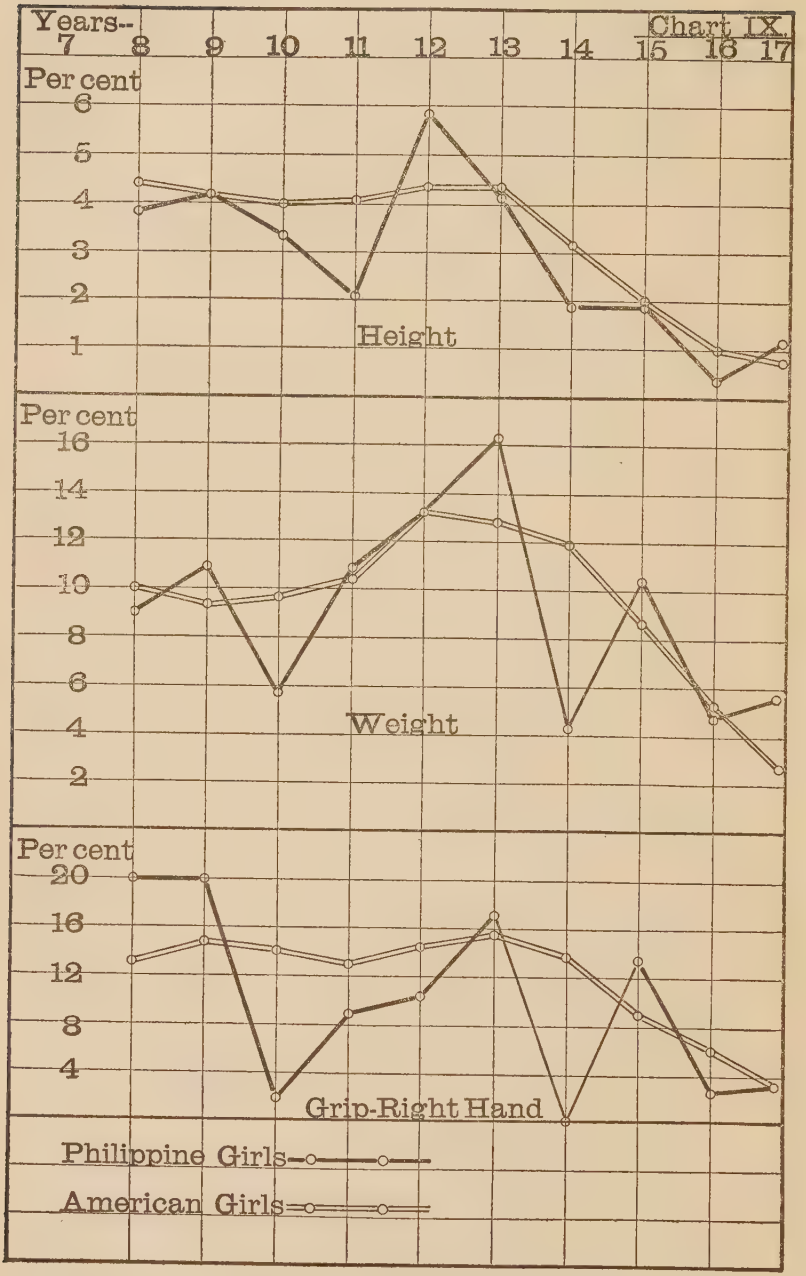

CHART IX. A Comparison of the Annual Increments of Growth of Philippine and American Girls.

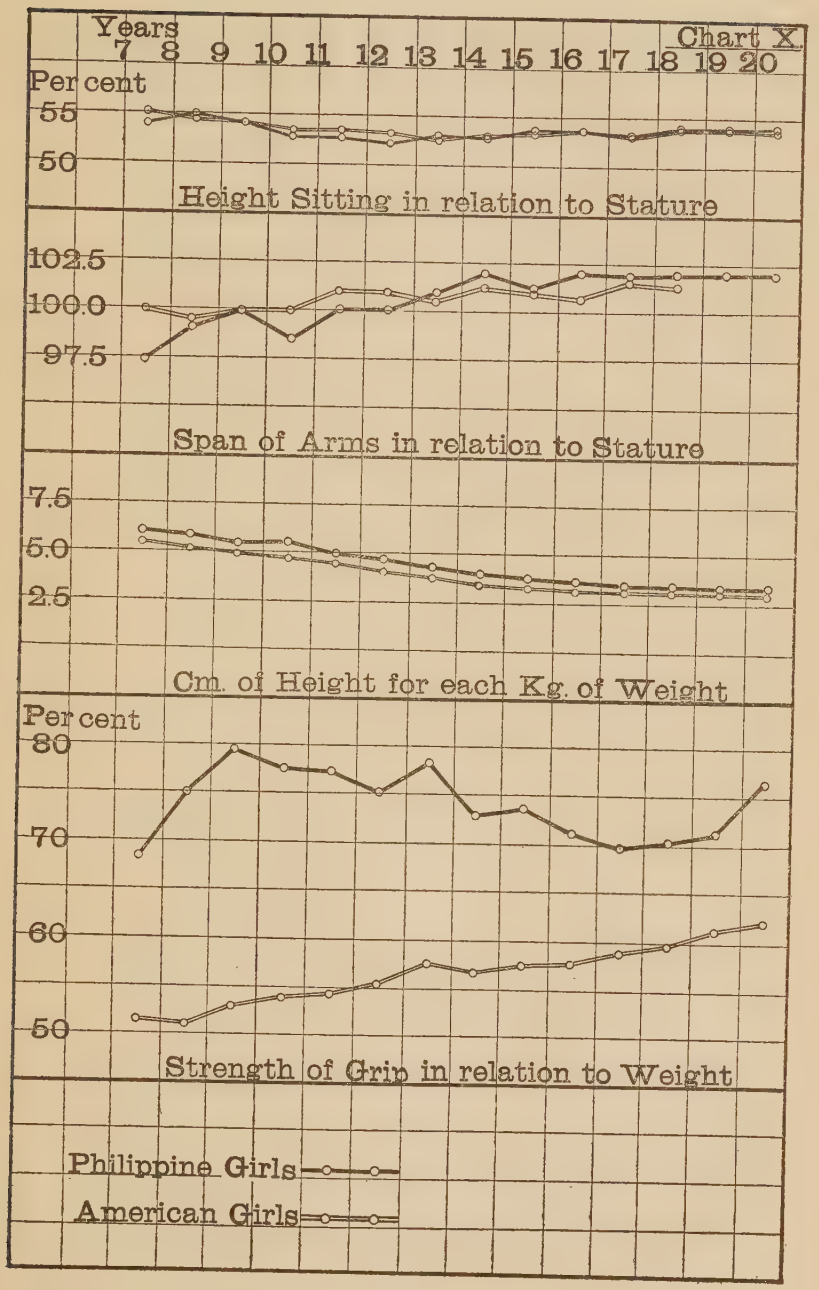

CHART X. A Comparison of the Relative Growth of Philippine and American Girls.

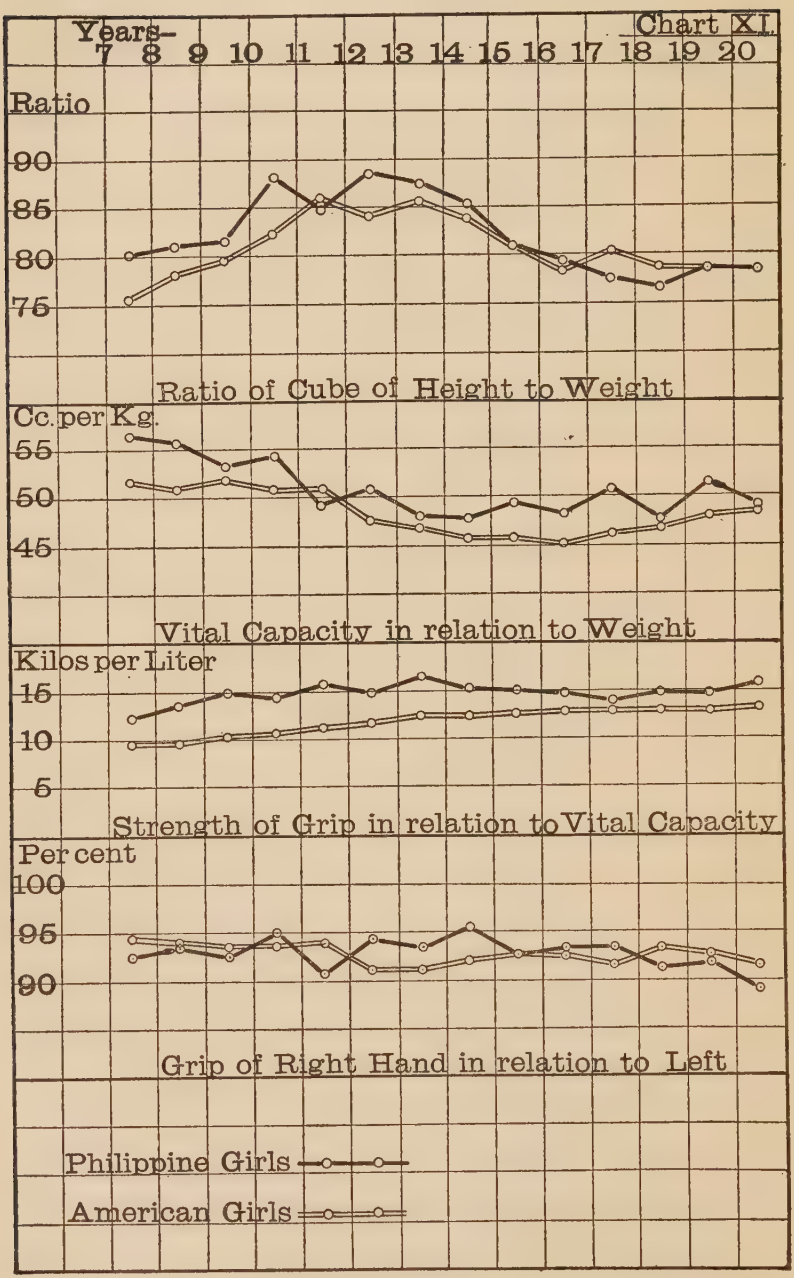

CHART XI. A Comparison of the Relative Growth of Philippine and American Girls.

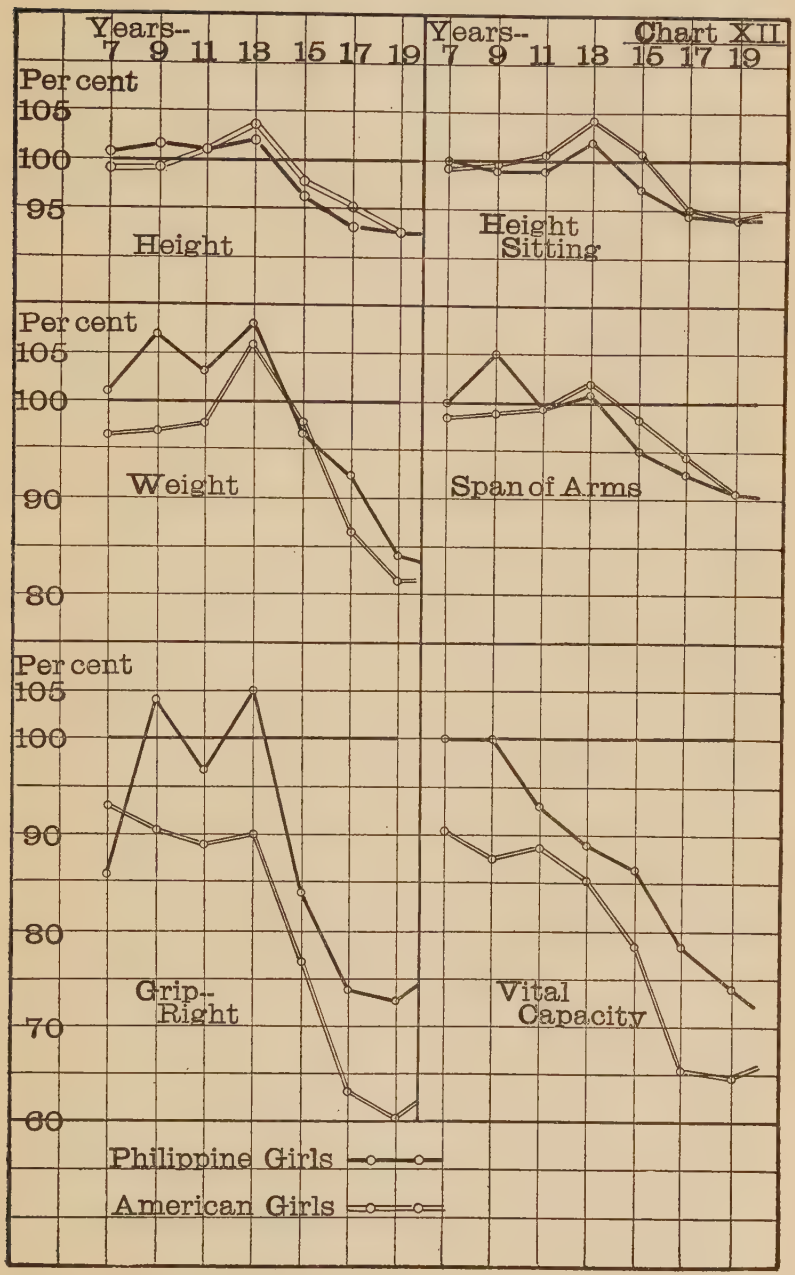

CHART XII. A Comparison of the Growth of the Girls of the two races in their relation to the Boys of their own race.

fore fifteen is due to the difference in height; it must be remembered that weight varies not as the height but rather as the cube of the height. In the tables and in Chart VII is shown the ratio of the cube of the height to the weight at each age for both races. The curves thus formed are parallel throughout, showing that the relation of the two races in weight is the same at all ages as for height. They show also that Philippine boys are at all ages taller relative to their weight; or, stated more simply, Filipinos are more slender than Americans.

Vital Capacity. Vital capacity varies also as the cube of the height, so that the discrepancy here again, although apparent, is not real. The ratio of vital capacity to weight is about the same for both races at all ages, as shown in chart VII. The curves show a great expansion in lung capacity relative to weight for both races between the ages of fifteen and seventeen.

Physical Proportions. Philippine boys are more slender than American boys of corresponding ages. Height sitting in proportion to total stature is about the same for both races, the difference of the averages being at no time more than one per cent. This indicates also that the two races are about equal in relative length of limbs. Span of arms relative to height appears to be from one to two per cent. less for Philippine boys before thirteen; after this age both races are relatively equal.

Strength of Grip. Before the age of thirteen, Philippine boys appear to be superior to American boys of corresponding ages in strength of grip both absolutely and relatively. From thirteen to fifteen, they are equal absolutely, but the Filipinos, being smaller, are relatively superior. After fifteen, Philippine boys fall behind in absolute strength, though retaining their relative superiority, as shown in Chart VI. In calculating strength of grip relative to weight, one must remember that both sets of boys were weighed with clothing, and that American clothing is considerably heavier than the light tropical garments. In the curves, this slight but appreciable difference in weight favors the Filipino; though it will go but a small way in explaining the results.

This difference in the relative strength of grip not being perhaps what one might expect, the conditions of the tests were carefully examined to see that there was no source of error. One's first thought would be that the instruments used may have been dissimilar. But I used a duplicate of Mr. Smedley's instrument, manufactured by the same company. The instrument was tested several times for correctness.

If Philippine pupils had recently been engaged in any form of labor specially adapted to developing the grip, as, for exam-

ple, the pounding of rice in mortars, this would be a disturbing factor; but it is thought this was not the case with the pupils measured to any appreciable degree.

I am unable to discover any important dissimilarity of conditions. If none exists, one must conclude that Philippine boys are, weight for weight, stronger in a single effort of grip than American boys. The left hand as compared with the right is about the same for the two races; the left hand is from five to eight per cent. weaker, the relation varying somewhat with age.

Variabilities. If one compares the variabilities given in the tables with those of Dr. Boas published in the Report of the Commissioner of Education for 1904, one notices that the greatest variability in height and weight occurs at fourteen and fifteen years in both races. This points further to a synchronism in the pubertal expansion of the two races. At this period both races appear to contain a large per cent. of both pre-pubescents and post-pubescents; this is doubtless the meaning of the wide degree of variability.

Girls

A comparison of the growth of Philippine and American girls is graphically shown in Charts VIII to XII.

Chart VIII shows the growth of the girls of the two races to be about parallel up to the middle of the pubertal acceleration; after this period, Philippine girls fall behind relatively. Corresponding growth-periods seem to coincide in time for the girls of the two races; and to differ most noticeably in the relative lack of growth-vigor in Philippine girls during later adolescence. This difference is less marked, however, with girls than with boys.

Chart IX shows the greatest growth-increments to fall for both races at twelve or thirteen years. As with boys, the pubertal expansion seems to be more sudden with Philippine than with American girls, and to expend itself more quickly, resulting in a more rapid falling off in the degree of yearly growth after twelve or thirteen.

Charts X and XI show relative physical proportions of the girls of the two races. Height sitting in proportion to stature is the same for both; relative length of limb is the same; arm-span relative to stature differs but slightly. Philippine girls appear to be more slender up to fourteen years of age, after which period the ratio of height to weight appears to be about the same for the two races. Vital capacity relative to weight is distinctly greater for Philippine girls; girls differ in this respect whereas boys were about equal.

In strength of grip Philippine girls appear to be superior to

American girls in absolute strength up to sixteen years, after which they are about equal. In strength relative to weight, Philippine girls seem to be superior at all ages, the difference ranging from ten to twenty-five per cent. Relative strength of the left hand as compared with the right is about the same for the two races.

In Chart XII an attempt has been made to compare the girls of the two races on a basis of their size and strength relative to the boys of their own race. It is claimed that women differ from the men of their own race to a greater degree among some races than among others; the curves were constructed to test this aspect of the matter. In the curves 100 per cent. represents boys; the curves show how much Philippine and American girls rise above or fall below average masculine standards of their race. The results show that in stature, sitting height, and span of arms, the girls of the two races are in this respect about equal, especially as they approach adulthood. In weight, Philippine girls appear to be slightly superior; in strength of grip and in vital capacity Philippine girls are considerably superior,—from five to ten per cent. In other words, the girls of the two races, when their averages are compared with average masculine standards, are structurally about equal; but functionally, in the two aspects measured, Philippine girls are nearer the standards set by the boys of their race than are American girls to American boys. This relation holds for late adolescence; and since the girls of both races seem to be mature by twenty, it doubtless holds true for the adults as well.

Chinese Boys

During the course of this study, I measured sixty Chinese boys at the Tondo Chinese School in Manila. Only pure-blood Chinese were measured, Chinese-Filipino mestizos being rejected. Their parents were mostly natives of southern China, —Amoy, Hong-Kong, Canton, Saigon.

I was assured by the principal of the school that they could be depended upon to give their ages correctly; consequently they were taken at their word in the matter of age. But I very much doubt if they gave their ages even so accurately as did the Filipino children.

In this connection one must remember that the Chinese count their ages, not from actual birthdays, but from the Chinese New Year. A ten-year-old Chinese boy is one who has ten times celebrated the Chinese New Year; on an average he is therefore nine and one-half years of age; whereas an American or Filipino boy who says he is ten years old is on an average ten and a half, or a full year older. In the tables, therefore,

I have set back the ages of the Chinese one year so as to make them entirely comparable with the tables for Filipino and American boys.

The following table presents their average measurements.

Averages of Sixty Chinese Boys

Age	Number Cases	Height	Sitting Height	Span of Arms	Weight	Vital Capacity	Grip of Right	Grip of Left
9	4	1237	680	1207	24.7	1350	19.7	19.2
10	7	1275	702	1252	25.2	1380	19.7	19.2
11	11	1286	695	1265	27.0	1470	22.6	21.0
12	9	1348	725	1342	30.4	1630	24.2	23.5
13	14	1390	750	1370	33.6	1770	27.0	25.9
14	10	1442	762	1447	35.1	2010	27.4	26.5
15	5	1585	841	1617	46.3	2450	40.1	36.1

These averages seem to show that in stature, height sitting, and span of arms, Chinese and Filipino boys are not far apart between the ages of nine and fifteen. Curves of growth appear to follow about the same lines up to that age.

In respect to weight, Chinese boys are heavier, both absolutely and relatively. They are not so slender as Filipinos. In absolute strength of grip Chinese appear to be stronger, but relative to weight, they are of about the same strength. The left hand appears to be somewhat more nearly equal to the right in Chinese than in Filipino or American boys.

The sitting height of Chinese boys seems to be somewhat greater than that of Filipinos or whites; or in other words, Chinese appear to have somewhat shorter legs comparatively, with a corresponding gain in the relative volume of vital organs. Span of arms relative to height shows them to have slightly shorter arms also before the age of fourteen.

Since the above was written, I find in "Nature" of Oct. 15, 1908, some results of a far more complete study on the Chinese by Mr. A. H. Crook, Queen's College, Hong Kong. He measured 659 boys and youths between the ages of ten and twenty-four years, and presents an interesting comparison between Chinese and English boys.

A comparison of my results with those of Mr. Crook seems to indicate that Chinese boys of Manila are less developed than those of Hong Kong. Climate may have something to do with the matter; also it is possible that he measured a better class of students at Hong Kong than I found among the shopkeeper's sons in the public schools of Manila.

Mr. Crook remarks on the small amount of chest expansion

in Chinese boys. This was determined by measurements of chest girth. My figures for vital capacity, obtained in an entirely different way, confirm his conclusions.

A Comparison of Philippine with Japanese Children

It appears that the Department of Education in Japan measures the height and weight of all Japanese school children. The average figures for the year 1901 for 869,014 children, as reported by Dr. Misawa in the March number of this *Journal* for the current year (p. 109) are, for boys, as given in the following table. Beside them are the figures for Filipinos and Chinese for comparison.

Age	Height			Weight		
	Filipino	Japanese	Chinese	Filipino	Japanese	Chinese
	Cm.			Kg.		
7	114.8	106.5		18.9	17.6	
8	119.1	111.0		20.8	19.1	
9	121.1	115.6	123.7	21.8	21.1	24.7
10	125.2	120.0	127.5	23.4	22.8	25.2
11	130.9	124.8	128.6	26.2	25.0	27.0
12	136.6	128.7	134.8	29.5	27.0	30.4
13	140.8	133.4	139.0	32.4	29.4	33.6
14	146.1	137.6	144.2	35.9	32.5	35.1
15	154.1	142.1	158.5	41.5	35.2	46.3
16	158.5	146.1		45.9	38.2	

Japanese boys to sixteen years of age are from six to twelve centimeters shorter than Filipino boys of corresponding ages. They are as much shorter than Filipino boys as the latter are shorter than American boys. The table shows the Chinese to be not appreciably different from Filipinos in height. This is one further item of proof that the mongoloid Malays of the Philippines are racially more closely related to the Chinese than to the Japanese.

In weight the same relationship holds.

OUT-DOOR SCHOOLS

By Elnora Whitman Curtis

It has often happened in the past that normal children have profited by educational experiments found beneficial in the treatment of defectives. The present movement for the establishment of open-air schools while relating to sickly and backward children, merits the serious consideration of educators, as pointing to possible changes in methods and curricula likely to be of practical benefit to all school children. Still in its infancy and comparatively little known, this educational innovation may be said, nevertheless, to have passed already its experimental stage in the countries in which it has thus far found expression. It may be noticed that while in line with other fresh-air activities, all illustrative of the advance in the science of hygiene and of child study, this movement for out-door education is of somewhat different inception, having started by means of the active co-operation of school authorities, in the cities which were the first to establish these schools.

We are accustomed to look to Germany for initiative in matters pertaining to education. It is not surprising, therefore, to find that country leading in the present radical departure from established pedagogical methods. The first experiment of the kind was made in Charlottenburg, just out of Berlin, where in a beautiful forest about three miles from the city this first out-door school was started, in the summer of 1904.

Before describing this school, patterning after which the other forest schools of Germany as well as the out-door schools of England and America have arisen, a few words as to its origin may be in order.

For a number of years there had been, scattered throughout Germany, day sanatoria. As far back as 1889 a thesis given at the International Tuberculosis Congress in Berlin aroused great interest in the subject of fresh-air treatment, and not long afterwards the Red Cross Association erected its first institution for men. Kranken-kassen (insurance societies for the sick) took up the work and many parishes and local associations supported institutions of the kind. Dr. Ritter-Becker, in co-operation with the Red Cross Society, had one of these establishments which he carried on for some years, placing

great emphasis upon forms of treatment now in everyday use and particularly upon the amount of time to be spent by children in the open air exposed to sunlight, advocating sun baths, dietetic treatment and individual gymnastics, but particularly an abundance of pure air for consumptive and scrofulous patients. In the beginning, these day sanatoria, or fresh-air colonies, were for men, then followed the establishment of similar ones for women and later, out of caring for the children of married women patients, grew institutions for children. In these day sanatoria for children, where a small amount of instruction was given weekly, simply enough to prevent their becoming entirely unaccustomed to work, we have the germ of the present Waldschule or forest school, which has lately spread to different parts of Germany.

It was but a step from the establishment of these fresh-air institutions for sick and convalescents in 1900, in which instruction at public cost played a part, to the establishment of similar ones for children, who though comparatively well, were not able, without injury, to endure the strain and confinement of ordinary school work.

That the number of public school children badly in need of treatment, remedial and preventive, is surprisingly large, has been strikingly brought out by the system of medical inspection which now prevails in most large cities of Europe and America, and which has been operative in Germany for the last fifteen years. By means of this system health records are kept throughout the school life of children and a correlation has been shown to exist between bodily weakness and mental inability, a large proportion of "backward children" being found in the number of those suffering from incipient tuberculosis, anæmia, heart trouble, scrofula and general debility.

To meet the need of such children, the Charlottenburg school board decided upon the establishment in 1904 of a forest school, and out of twenty-five schools of the city, children were chosen, selection being made by the school physician aided by principal and teachers, those having severe forms of heart trouble, open scrofulous sores and those in the more infectious stages of tuberculosis not being included in the number. The school opened with ninety-five children. During the same year the number increased to one hundred and twenty, and in 1907 to two hundred and forty.

As has been said, the school is in a beautiful forest. Situated three miles from the city, a ride of twenty minutes by car and a walk of seven minutes brings one to the entrance gate. A portion of the wood, comprising about five acres, has been enclosed by wire fencing, and here one finds temporary barracks containing schoolrooms, besides sheds and small buildings for

baths, kitchen, workshops, etc. These buildings all have the simplest of appointments. Schoolrooms are provided with desks, light-weight chairs that can be carried in and out by the children, and ordinary school apparatus. They are furnished also with stoves for use in coldest weather though, in accordance with the design and purpose of the school, teaching must be carried on out of doors whenever possible. Even the prescribed rest of two hours after the mid-day meal must be taken in the fresh air, and reclining chairs, rugs, and wraps form part of the school equipment.

The children arrive at the school at an early hour (7.45 A. M.) and remain into the evening. On reaching the school they have breakfast, which consists of a bowl of soup and bread and butter. Classes are then held until 10, when the children are given a luncheon of milk, bread and butter. Lessons, gymnastic exercises, play and manual work fill up the remaining morning hours until 12.30 when dinner of soup, meat and vegetables is served. After dinner comes the two hours period of rest or sleep, obligatory for all. Classes are held from 3 to 4, after which the children again have something to eat—this time, milk, black bread and jam. The remainder of the afternoon, as a usual thing, is spent in play. Supper at 6.45 consists of soup and bread and butter, after which the children return to their homes.

Six men and three women are employed as teachers. The same general subjects are taught as in the regular schools, all of the seven grades except the lowest, which is left out becasue of the distance which is too great for the youngest children, being represented, the children ranging in age from seven to fourteen years. Classes usually number twenty, and never more than twenty-five. No lesson lasts over half an hour and no class follows another without five or ten minutes intermission. Much of the teaching is of an informal character, many subjects lending themselves readily to a freer form of treatment because of the environment. The materials for nature study are, of course, available, and plant, animal and insect life at hand. Geography is taught by the scaling of maps out doors in sand, and arithmetic made of less remote interest by practical work and actual measurements with rules and tapes. Poetry and songs descriptive of forest sights and sounds are chosen. Materials gathered in the woods, dry twigs and branches from the trees trimmed in the spring are utilized for work in carving and carpentering. Singing and gymnastics form a prominent part of the work. Nowhere, it is said, is there so much singing or so much voluntary gymnastic exercise as in the Waldschule. Apparatus consisting of bars, poles, ropes, etc., are out of doors, and swings especially are constantly in use.

Gardens are cultivated, each child having a separate flower bed, larger plots being reserved for grains, vegetables, and common food plants which many children know only by name. Girls spend some of their leisure time at needlework, weave baskets out of grass, and help in preparing vegetables for dinner and in small class-room duties.

Baths play a prominent part in the Waldschule programme. Each child receives warm baths, and by order of the physician salt, sun, and shower baths are given in individual cases, being considered among the important therapeutic agents.

The cost of establishing the school was in round numbers 40,000 Marks and the daily average cost per child is 85 Pfennige (approximately 21 cents), of which 50% is for nourishment. When able, the parents pay from 5 to 50 Pfenige a day, but for many of the children the school is entirely free. The street railway company has given reduced rates, and twenty free tickets, the city furnishing one hundred, thus providing transportation for one-half the children. The culinary department is provided for by the Women's Patriotic Alliance, and is in charge of a Red Cross sister. The city furnishes instruction and school equipment. Teachers are chosen from the regular Charlottenburg schools and receive besides board fifty Marks per month in addition to their regular salaries, for hours are longer and no holidays possible, as the Waldschule is open seven days in the week.

A physician visits the school three or four times a week, makes frequent examinations and prescribes all courses of treatment. Every fortnight the children are weighed, and steady gains are reported in the majority of cases. In general, the gain is seven or eight pounds during their few months' stay, or about one-half pound per child per week. Sometimes from ten to sixteen pounds are gained. As to other physical results, twenty-three of the anæmic cases were reported cured and forty-five as greatly improved; an increase in chest measurements is recorded, and heart and lung troubles have been greatly benefited. All children showed increasing immunity to colds and almost complete freedom from infectious diseases, due to forest surroundings.

Beginning with three months in the first year, and open for five months in its second, the school term has now been extended till it covers a good portion of the year, being suspended only from December to April, the worst months of the North German climate. In proportion as the length of stay into the winter has been late each season, the percentage of cures has been greater.

As to results from a pedagogical point of view, children are reported as showing marked improvement in "attention and

mental alertness'', almost all, or nine tenths, being able to resume ordinary school work. Great improvement in behavior, too, has been noticed, moody and quarrelsome children becoming more equable. Punctuality, cleanliness and orderliness are developed. As to discipline, no difficulty is experienced in maintaining it, notwithstanding the greater freedom allowed the children. Corporal punishment is not permitted and harsh treatment, and irony even, may not be indulged in.

A closer personal relation between teacher and pupil is established, and the co-educational factor which is not usually looked upon with favor by Germans has met with approval, and has even been acknowledged to have been beneficial in influence.

Writers on the Waldschule are enthusiastic. They speak of the blessing that goes through the children to their homes, of the effect of the forest upon them, of how their æsthetic nature is aroused, of how they watch the changing seasons, are inspired to find out the causes of the phenomena about them, and of the advantages of getting ideas from objects themselves instead of entirely through the words of a teacher.

A number of German cities soon followed the example set by Charlottenburg, and early in 1906 the Kultus-minister sent out a circular letter to his colleagues in different parts of Germany, calling attention to the Charlottenburg school. The Kaiser, too, recommended the establishment of other out-door schools, no doubt influenced by the increasingly large number of youths unfit for military service because of flat chests and muscular weakness, thought to have been brought about by sitting over desks in ordinary schoolrooms.

In May, 1906, on the occasion of the Kaiser's and Kaiserin's silver wedding anniversary, a school at Gladbach was founded, funds being furnished by a local organization. Fifty pupils attend the school, which has permanent buildings provided with regular apparatus and equipped much more elaborately than the Charlottenburg school, its walls being decorated with pictures from German fairy tales. The buildings are surrounded by woods, and children have lessons out of doors whenever possible. The plan followed is in general like that of Charlottenburg, instruction being limited to two hours. Children are chosen by the city physician and are under medical inspection while in the school. Meals are furnished by a near-by sanatorium, but the city provides school instruction. The cost per child is fifty Pfennige a day and this includes car fares to and from the city.

Mülhausen also established an out-door school in 1906 very much on the lines of the Charlottenburg experiment, but providing for one hundred children during the summer months only.

The municipality not only bears the cost of instruction, but also that of food, four meals daily being provided, and free transportation furnished. Two men and one woman are employed as teachers and instruction is limited to two hours, much informal teaching finding place, however, at other times, in enjoying different occupations and recreations afforded by the grounds. The school is especially for anæmic children, those suffering from heart and lung troubles being excluded. Satisfactory results are reported, though no record, unfortunately, as to the progress of children who have returned to their ordinary schools has been kept.

In Dresden, an open-air school was started in May, 1905, by a private individual on his estate in Blasewitz. The school is for twenty pupils and the teacher was provided by the municipality. Children were chosen from nineteen schools of the locality and are given four meals a day. It is a regular Volkschule, except that in summer the classes are held out of doors under the trees or in the forest. It was hoped that it would be made a part of the school system, but at last accounts this had not been done. Schools have also been established at Strasburg, Elberfeld, Lübeck and Dortmund. Those at Strasburg and Dortmund, like the one at Mülhausen, were erected at state expense; the others by private organizations. The Dortmund Waldschule opened this past year with one hundred children, and four teachers in charge of classes. As in the other Waldschulen, instruction was carried on out of doors, except in impossible weather, when barracks were used as shelter. Street cars carried the children to and from school each day. The Lübeck Waldschule for fifty-eight children, twenty-six boys and thirty-two girls, was opened in May, 1908, with a man as head teacher and two women assistants. A physician has medical oversight of the school. Baths and a two hours' midday rest are part of the prescribed treatment. School gardens are a special feature, about fifteen quadrameters of garden plot being apportioned to each child for his own use.

Presumably Giessen already has a Waldschule, for in accordance with a city ordinance of last July, a school of two classes was to be opened on April 1st, 1909, in the city forest.

In Cologne, Essen and Pankow plans for starting schools are under way, while other German cities, as for example Hanover and Solingen, have the founding of such schools in contemplation.

At the beginning of the last school year a school was started in Lausanne, thus extending the experiment to another country and the establishment of one in Zürich has been strongly advocated. The Lausanne school is in a most beautiful forest region, high above the city, in the neighborhood of the street

car line. Thirty children, of whom nineteen are girls and eleven boys, in age ranging from seven to thirteen, make up the number of those having been chosen who were suffering especially from anæmia, general weakness, delicate constitution, bronchitis, etc. Instruction is in the open whenever possible and occupies on an average two hours of the morning.

In Austria, too, the idea has found favor and a lively propaganda in the interest of the Waldschule was at last accounts being carried on in Vienna.

English Out-Door Schools

As the result of a visit to the Charlottenburg Waldschule by municipal authorities of London, while on a tour of investigation, a forest school patterned closely after the Charlottenburg model was opened by the London County Council in July, 1907.

The school, now established on Shooter's Hill, Woolwich, was located in its first season just outside London in Bostall Woods, a large forest owned by the "Royal Arsenal Co-operative Society," which loaned twenty acres of its recreation grounds for the purpose. An appropriation of £400 was voted by the government for salaries and equipment, and voluntary subscriptions made up the sum necessary for running expenses, so that for three months the school was able to care for one hundred children. A head teacher and four assistants were appointed, and classes formed, the number of pupils not exceeding twenty in any one. Children arrived at the school at nine in the morning and remained until seven at night, except on Saturday, when they returned home at one. The daily programme followed was much the same as in the Charlottenburg school; here, too, teaching being carried on in the open whenever possible, short school periods alternated with periods of rest and play. The same practice prevailed, also, of leaving easier subjects for afternoon, reading, writing and arithmetic coming in the morning. Informal instruction was given in a number of subjects, among them history and geography, this particular section of the country abounding in local historical interest. The land which the school now occupies at Woolwich was once owned by the Earl of Shrewsbury and gambled away by him in a single night, and here Henry VIII is supposed to have come and dined with Robin Hood, a legend which if not tending to historical accuracy has served to enhance the romantic interest of the spot. Stretched out in their reclining chairs, for as in Charlottenburg, children must take an afternoon rest, their eyes may wander over an extended view of surrounding country, for part of the recreation ground includes a sunny hilltop and slope. Here the children have

their gardens, and here they play many of their group games. The barracks, as one would expect, are in the more sheltered and wooded portions of the grounds. Singing, physical exercise and manual work form a large part of the school occupations. Sitting under the trees, groups work at basketry and model in clay, and many of the little objects designed and moulded after their own fancy show a degree of thought and originality, surprising in children that to all appearances are below those of average intelligence. The teaching in general is a departure from ordinary school methods. Discipline has been reduced to lowest terms, punishment being almost unknown, and steady progress in character has been apparent.

The pupils are drawn from three neighborhoods, Woolwich, Greenwich and Deptford, and are selected by the school medical inspector from the weak, anæmic, debilitated and consequently backward children, representing in fact those lowest in physical condition of these school districts. They are subject to medical inspection by the London County Council physician, weekly measurements and weights being taken, records of which are kept by a trained nurse, who makes one of the school personnel. Blood tests are made upon the children on their entrance and again after a stay of ten weeks. A gain in weight of half a pound a week on an average is reported for each child ; also a generally improved condition of all the children. Four good meals a day are furnished, and pupils take part in preparing dinner, washing dishes and clearing away, boys as well as girls being taught to wait upon table. The pedagogical as well as the physical side of the experiment has proved satisfactory, pupils being able to return to their own grades after their stay in the open-air school is ended. That school authorities were satisfied that the aims of the school were fulfilled, even under the less favorable conditions of its first year, the establishment of other schools of the kind by the London County Council the following season goes to prove.

Last year the government grant was increased from £400 to £2,000, a sum which it was estimated would cover all expenses except the cost of feeding, that similar schools might reach the needs of poor children in other parts of London. The school at Shooter's Hill, Woolwich, took the place of the one at Bostall Woods and two others, one at Horniman Park, the other at Kentish Town were opened, each providing for seventy-five children, divided into three classes and provided with a staff of head and three assistant teachers, nurse, cook, helper, and school keeper. As further evidence that the experiment was thought fully to justify continuance, Dr. Frederick Rose, advisor to the London County Council, caused to be placed in the County and Town Exhibition at the White Chapel Art Gallery and later at

the Franco-British Exhibition, a model of an out-door school. In addition, a pamphlet was issued, giving descriptions of the model and many suggestions for starting out-door schools. The need of such schools was set forth, substantiated by statistics as to the number of debilitated children in London, there being thirty-five thousand to forty thousand in that city alone, it is claimed, unable to attend ordinary school without injury. Suggestions were given also as to proper location and equipment, estimates of cost and hints as to management, as well as methods of instruction to be employed.

London, after her initial experiment, was not alone the following season in providing these schools in England, and two others were established during last summer, one at Halifax in July and one at Bradford the month following. These, like the three London schools, followed closely their German prototypes. In both places untenanted country estates were used, in Halifax mansions and outbuildings being utilized, as in the London school at Kentish Town, and here children between the ages of six and eleven to the number of sixty-five were taken from schools of the poorest districts, characteristic defects of children selected, being according to the report of the Halifax Education Committee "enlarged or tuberculous glands, feeble circulation and anæmia." Children were brought by car to the school at eight in the morning and remained until seven at night. Three women, who were chosen with great care from the number of teachers volunteering for the work, formed the teaching force of the school and a cook and two assistants made up the staff, which next year is to be further increased by the addition of a nurse, who will give the children baths and attend to other hygienic needs. The gain of the children in weight was from one to eight pounds during the three months that the school was open, the average increase being three and one-half pounds and that in a season when increase in weight was small. A great change also was noticed in appearance, and altogether the physical gain of the children was unquestionable. Marked improvement was noted in behavior and as to progress in studies, about two-thirds of the teachers of schools to which children were returned, reported that these pupils were able to follow their work more intelligently.

The Bradford school, situated five miles from the city on high ground 425 feet above the sea level, in a field of five acres, was made up of children between the ages of eight and nine to the number of forty. They were chosen from five schools in the poorest districts near the centre of the town and were of the "very poorly developed, delicate, neglected looking, anæmic, scrofulous type". Each morning they were carried by car to the school, arriving there a little after nine, and re-

maining until 6.35 at night. Three meals were furnished daily, the more frequent feeding of these children not commending itself to the doctor in charge. One hour a day was given to rest, this period being extended to an hour and a half for a considerable number of children. Baths were given weekly, the intention having been to give two shower baths each week had this not been temporarily impossible through defective water supply. Physical exercise and opportunities for play and games were supplied. Two women teachers, both of whom were paid on a higher scale of salaries than are teachers of ordinary schools, were in charge of the school instruction.

The gain of the children was very satisfactory. In weight the average gain per week for the nine weeks that the school was open, was .10 kilos or 3½ ozs., while the increase in the percentage of hæmoglobin shown by blood tests was most marked. There was an increase in chest expansion, and the change in bearing and general appearance was much for the better. While in the report of the Bradford experiment little is recorded on the pedagogical side, the statement is made that as to the usefulness of the open-air school in the system of elementary education there can be no doubt.

Before leaving the English schools it may be well to mention the Manchester Country School which, though representing a different type of work, has materially benefited children physically and mentally. In 1904 a number of private citizens leased five acres of land ten miles from the city of Manchester and erected permanent buildings upon it, containing two dormitories with sixty-four beds in each, and tents which would accommodate one hundred and thirty-two in addition. In the grounds surrounding the buildings were flower and vegetable gardens and a playing field of four acres. A resident matron with a corps of assistants was placed in charge. Here, for a stay of two weeks, children are sent out in relays with their teachers from April to October, but for this outing parents pay seven shillings, this sum including railroad fares. These payments nearly cover the cost. One fortnight of the time is reserved for mentally defective children, but for the rest, normal children profit by this change of air and scene. All show improvement in health, manners and general behavior. From the start the committee of citizens worked in conjunction with the Education Committee, and later the school was taken over by the city and made part of the municipal educational system.

Another somewhat different experiment has demonstrated its value in the London County Council open-air school at Osea Island, for children who, besides being deaf, are so physically and mentally weak as to have made little or no progress in an ordinary city school for deaf children. The entire school of

seventy children, teachers and all, is transferred to Osea during the summer months, and under the more favorable influences of natural surroundings, with plenty of fresh air, physical exercise and sea bathing the children have not only benefited physically, but the dullest and most apathetic have manifested an awakening interest in things about them and have shown some mental improvement.

Providence Fresh-Air School

Let us turn now to America. Providence was the first city in this country to establish a fresh air school in connection with the public school system. Unlike many such radical educational departures, this venture served no apprenticeship as a private philanthropy, but had at the outset the active support and co-operation of the Board of Education, though to the efforts of the Society for the Prevention of Tuberculosis the carrying out of the undertaking is primarily due. The school was started in January, 1908. It differs in many respects from the fresh-air schools of the old world. It is entirely lacking in country and even picturesque surroundings. Situated in the heart of one of the city's thickly settled, though otherwise desirable localities, on a side hill close to the street, the site nevertheless offers a favorable contrast to those of schools in densely populated sections of larger cities, being well exposed to sun and wind. Here we find, instead of barracks, designed and built for the purpose, an old brick school building—the "Meeting St. school house", as it is called, which has been slightly remodeled to meet present needs. A portion of one wall of its upper story has been torn out, and four long windows reaching nearly from floor to ceiling, have been fitted into the opening. These can be lowered in inclement weather by means of pulleys, but as a usual thing remain fastened back against the ceiling. Besides this wide exposure on the south, the room is lighted from two other sides. Movable desks and chairs are placed in front of the large opening and the children sit with their backs to the sun and air, well wrapped up during the coldest weather in warm outer garments, their feet in heavy quilted bags which extend up over the back of their chairs. They are provided, too, with mittens and at times with warm soapstones which they use either for hands or feet. At one end of the long room are two stoves, and these temper the air so that it averages ten degrees warmer than that outside. One of the stoves which is used for cooking purposes, for the children do not return to their homes between sessions, also serves for heating the soapstones. The pupils arrive at 9 in the morning, not for breakfast, as in the other schools mentioned, and in the middle of the forenoon (10.30) during the twenty

minutes recess each child receives a cup of hot soup. At noon they eat luncheons which they have brought with them which are supplemented by one substantial hot dish prepared for them at the school.

It is a very merry little company that gathers around a long table and if faces are an indication of their feelings, these children are having a good time. One almost forgets the cause of their being there, and inclines to count them, for the time being at least, among the fortunate school children of the world. Children, however, admitted to this school are all tuberculous. There are some cases of hip disease and a few children are in plaster casts, while others have bandaged necks, because of tuberculous glands which operated upon, have failed to respond properly to treatment. Most of the children, however, are without apparent ailment or deformity.

The school numbers twenty-five. It is, of course, ungraded, and all grades from 1 to 6a are represented. Lessons are carried on for the greater part as in a regular school, children being able even in cold weather to cipher, write and draw by using at times their soapstones. Physical exercises form rather an important part of school work. In some few cases children are excused from these, but the majority carry them through with zest. They exercise with rods, march and go through various movements tending to develop lungs in particular and bodies generally, many of these movements taking on the form of play, and even at times the "let's pretend" sort. Picking up snow from the floor they round the mass, make hard balls and throw them, or they blow up imaginary paper bags, their faces growing red with their efforts to burst them. In this manner certain definite ends in view are pleasantly accomplished.

Naturally great improvement in the physical condition of children under such special care and attention takes place. Charts are kept showing increase in weight, height, etc., and a physician, who visits the school three times a week or so, keeps in touch with all cases. A medical inspection record is made out for each child with information as to personal and family history, condition of eyes, teeth, glands, heart, lungs, chest circumference and expansion and presence of deformities. Special attention is given to teaching children proper care of the teeth, each child being provided with a toothbrush, which is kept at the school.

Much good has been accomplished by medical inspection in matters of school hygiene of late years in Providence, but the need has been realized more and more of some special provision for weak and debilitated children, who having passed the years when most subject to contagious diseases, from six years and upward, are in ever-increasing proportion given to lung

troubles. Many incipient cases, lacking care and attention and obliged to endure the confinement of an ordinary school-room, develop into serious ones.

While the city furnishes building, school equipment and teacher, it is the "Society for the Prevention of Tuberculosis" that pays car fares, provides luncheons and furnishes bags, mittens, etc. Satisfactory as the physical improvement of the children has been—for charts show an increase in weights and measurements and wounds which had refused to respond previously to treatment are reported in good condition—the progress which the children have made in their studies is no less encouraging. Individual attention, good nourishment, fresh air, physical exercise, etc., have all combined to enable children to keep up with the grades they have left. In one case a pupil has even been able to skip a grade. The periodical tests which by permission of the school superintendent might have been omitted for these pupils, had the teacher so desired, have been given, no difficulty whatsoever being experienced in keeping these children fully up to regular grade work.

The length of stay in the school is governed somewhat by the waiting list, those most sorely in need of treatment having the preference, though occasionally a child who has slipped back on a return to the ordinary school, as a matter of expediency is reinstated that the cure may be permanent, notwithstanding the fact that relatively the need seems less urgent.

It will readily be seen that of necessity a school within walls, even though it be within three walls instead of four, offers fewer chances for deviations from ordinary school methods and for informal and indirect teaching than do the Waldschulen of Germany or the out-door schools of England. In proportion as such opportunities are lacking, character-building may expect to find a less important place in the general results noticed. Coming under the influence of one teacher instead of several is more in accordance, too, with regulation methods, nevertheless, a school of this kind, affording as it does some opportunity for the cultivation of group spirit, is contributing somewhat to moral development. An enthusiastic teacher who shares occupations, pleasures, discomforts; eats, plays, works with them, is, indeed, a new experience in the life of public school children. Needless to say, a teacher of exceptional adaptability and personality is needed for work of the kind which often involves no small amount of personal sacrifice. Climatic conditions may mean temporary hardships, and the example of cheeriness and good comradeship sets the pace at which small imitators are to follow. Tact and kindliness here ease many a situation. As the teacher of this little group in Providence talks enthusiastically to her visitors of her work,

the children listen and enjoy the recital as something personal in which they have full share. Instead of the low-toned conversation usually carried on at the teacher's desk, her bright cheery voice reaches the children who watch her movements as she points out this and that and talks openly about all that pertains to this new sort of school life. She explains, perhaps, how a certain boy does not really want to do so, but has been persuaded to wear his cap in school for the first few days till he can get thoroughly used to new conditions. She shows her own paper jacket which she is sometimes in severest weather obliged to put on under her outside coat. She tells how nicely the wound of this boy is healing or how finely another boy is doing in his studies. Under such influence it is difficult to imagine the question of discipline assuming very appreciable proportions. Such methods are not those of "rod discipline." Nevertheless they seem to be adequately meeting the needs of the situation.

Boston's Out-Door School

To Boston, pioneer in the founding of vacation schools and other educational experiments, belongs the credit of establishing the first *out-door* school in this country, though as we have seen, Providence was the first city to have a *fresh-air* school. Like the Providence school, the one in Boston was started by the local society for Prevention of Tuberculosis. This society maintained last summer a camp on Parker Hill, a few miles from the centre of Boston on the edge of one of its suburbs, for children suffering from tuberculosis. This camp, called the "School of Out-door Life", opened last July and supported through the summer by voluntary contributions, at the end of the season was taken over by the city and made part of the regular school system, the Tuberculosis Society operating it in conjunction with the Board of Education.

In establishing this school the society was exacting as to the sort of teacher to be accepted for this new field of work. The choice fell upon a woman who had had experience in every grade and as principal, one who had taught children of almost every nationality and whose school had received "tough boy" problems—a teacher who had not been contented to know her pupil's through the school hours of the day only, but had been accustomed to follow them into their homes, giving time and attention to backward children to such an extent as to have received the somewhat doubtful compliment of being known as the "feeble minded" teacher.

The school was first located in an apple-orchard of fairly good size, on a hill-top particularly exposed to wind and weather and too well supplied, perhaps, with neighbors for the

ideal camp. Equipped with a lean-to kitchen, dining-room, shower bath and a number of tents for shelter, this school was kept up well into the winter, being moved last January to its present location in Franklin Park. Here in this city park a building called the "Refectory" which had been unused for the past eight years except for one large room on the lower floor, utilized as a public reading room, has been put in order and in its arrangement and equipment offers the greatest possible contrast to the schools already described. On the lower floor are dining-room, kitchen, etc., on the second a rest room, but it is on the roof of the building that all classes are carried on. A movable platform covering a space of 14 x 20 ft. has been built and studs erected which support a canopy top from which curtains can be let down in case of high winds or storms. No provision is made for heating the space which, except for chairs and desks, is provided with almost no school apparatus. The innovation noticed in Providence, of heavy bags to protect the lower part of the body, is in evidence here, but neither soapstones nor other artificial means of warming themselves are furnished to the children while on the roof. The greater part of the roof space is left open, for free play and games. As if to make up for lack of adornment and meagreness of schoolroom equipment, rooms on the lower floor of the building have been made particularly attractive. Pictures, carefully chosen, are upon the walls and flowers in the windows. Table appointments and the general scheme of decoration have been carried out with an eye to æsthetic values. Special sets of white and gold dishes figure in the dining-room inventory—as compared with enamelled bowls and spoons in the German Waldschule, where table furnishings are reduced to simplest terms.

Feeding plays a more prominent part here than in the Providence school, children receiving three meals daily. For breakfast they have cocoa, bread and butter, stewed fruit and sometimes a cereal; for dinner, either braised beef, stew or roast, a vegetable, fruit and milk, or sometimes in place of fruit, candy, either molasses or "fudge"; for supper, milk (all they can drink) graham wafers or ginger snaps. The best of materials are used in preparing the food, great care being taken to provide pure milk and the best of butter for cooking. Cost is not closely considered and running expenses are much higher than in the Providence school, for a matron or cook, cook's assistant and janitor or handiman are employed here, representing a cost of administration of $1.00 per week for each child. Parents or charitable organizations pay 10 cents a day per child for food, the Tuberculosis Society paying the remaining cost, which amounts to about six cents a day.

All children take turns in waiting upon table and learn lessons in careful serving. Special attention is paid to conduct and to table manners, and a flag is given as a prize to the table best deserving it. It sometimes happens that behavior for the week at both tables is so exceptional that the flag must divide its time, staying until dessert upon one table when it is borne off to grace the other.

The physical gain of these children during the short period of the school's existence has been satisfactory in the extreme. It is true that two or three cases, owing possibly, it was thought, to the presence of other complications which prevented their responding to treatment, have not been benefited, and these have been removed to hospitals or sanatoria. On the other hand, seventeen or eighteen cases have been discharged as cured.

The length of stay is not limited. Children go every two weeks to the Boston Consumptive Hospital where they are examined by Dr. Floyd. Most of the children, it should be stated, are from families in which there have been one or more cases of tuberculosis. The majority have increased in weight during their stay. As an example of how the children of this school are taught self-dependence, they weigh themselves every day and report the record.

The same general course of study is followed as in any ungraded school, but periods are short, half an hour after dinner is spent in reclining chairs, and certain physical exercises, calculated to meet the needs of this class of children have been introduced, particularly breathing exercises.

SCHEDULE

A. M.	
8.45- 9.00	Breakfast
9.00- 9.15	Work in classroom by one section while the other is doing work in kitchen and dining-room
9.15- 9.30	Opening exercise
9.30- 9.35	Physical exercise
9.35-10.00	Number exercise
10.00-10.05	Breathing exercise
10.05-10.20	Spelling
10.20-10.40	Number
10.40-11.00	Recess
11.00-11.15	Reading C
11.15-11.30	Reading D
11.30-11.35	Rest period
11.35-11.50	Reading B
11.50-12.00	History

P. M.	
12.00-12.15	One section plays, the other prepares tables
12.15-12.30	Washing
12.30- 1.00	Dinner
1.00- 1.15	Brushing teeth. Kitchen and dining-room work
1.15- 1.30	Preparing work in classroom
1.30- 1.45	Music and voice drill
1.45- 2.15	Division C and D, rest and relaxation Division B and A, language or geography
2.15- 2.45	Division A and B, rest and relaxation Division C and D, language
2.45- 2.55	Physical exercise
2.55- 3.30	Drawing, which may be Sketching, Cutting, Painting, Manual Work
3.30- 3.45	Play games in groups and preparing table for supper
3.45- 4.00	Washing
4.00- 4.30	Supper
4.30- 5.00	Home

To illustrate how the rigidity of the ordinary school régime is relaxed, children sitting at their work tied up in their bags, at the word of command free themselves, a second count finds them upon their feet, a third, and they are in position for marching and other physical exercises. A delightful freedom is manifested and enjoyment in what they are doing such as has been noticed in the last few years where kindergarten methods have been carried upward through the primary grades and children no longer feel they cannot express themselves until called upon to do so. "Close one nostril and smell of a flower," says the teacher, in starting exercises calculated to induce natural breathing movements, "a beautiful red rose, and smell hard." "And now take a dandelion, and blow off all the seeds." "Now walk like a duck," and around the children go imitating the waddle of a duck. Next in a sitting position, up and down they go on their toes trying their best not to be first in tumbling over. "And now let 's make a snow ball," says the teacher. "Pick up the snow from your desks, squeeze it hard. Oh, make harder ones!" "I 'm going to put some water into mine," pipes a small voice; "there now throw it!"—and away the imaginary snow balls fly! They blow up paper bags and are told finally to blow up a "very big one." "A meal bag," suggests one of the boys; accordingly a meal bag is blown up and burst with great enjoyment. Thus appeal is made to childish imagination and the picturesque element introduced into physical exercises, in a way to prevent their becoming too consciously purposeful.

Here, as was noticed in the Providence school, the oppor-

tunity which the teacher has to impress her own mood upon children, is exceptional. What might well be considered hardship is accepted as a privilege. "I wish I had n't ever got to go back to any other school," said one young pupil to a visitor, and they are all made to feel that they are having a capital time together. To be sure sunny rooms, flowers, daintily set tables and nourishing food are all great luxuries to these poorest of poor children, but to sit in the wind and cold doing their sums with cramped fingers is a less pleasing side of the experience which, except for being imbued with the idea that they are enjoying themselves, might easily appear unbearable. The skillful introduction of exercise or play at the right moment, and never-failing cheerfulness of their leader tides over many a critical situation. A snow storm comes up, and is straightway utilized as subject-matter for a dialogue.

Thus while bodies are being hardened the mental attitude of being game is inculcated. To put twenty children, in the course of a few months, well on the road to health is no bad municipal investment, but to cultivate in them a truly courageous spirit is likewise no bad training for future citizenship. When the visitor, notwithstanding her interest in the school and a desire to find out what she can about it, is unable to lose consciousness of her physical discomfort, is thankful for an opportunity, when the children march, to keep time with her own chilled feet,—has to think about it some moments before her courage rises to the point of attempting notes with her benumbed fingers—the attitude of these children raises a question as to influences which have brought this about. To be surpassed in such matters of physical endurance by those who have been in camp during the fall and winter months, is not so much to be wondered at, but to be outdone by certain little new comers who in a day or two have caught the spirit of the school seems more remarkable.

"Do the children enjoy it?" asks the visitor. "Answer the lady and tell her why you like it", says the teacher, and a reply is given that while it suggests a little the idea that the children may have been aided in the expression of what it is considered desirable they should feel and a Christian Science attitude, is so corroborated by beaming faces as to leave no room for doubt upon this question.

As to pedagogical results, some "impossible" cases, as the teacher called them, have been taught to read and write and all are able to keep up with the grades they have left, for notwithstanding innovations and interruptions to which work in the school is subject, pupils receive a larger amount of individual attention than is possible with larger numbers. Plans

for the extension of the work to summer camps for tuberculous and anæmic children are now under consideration.

Boston's board of education proposes to establish another out-door school, possibly in Charlestown, and Providence is to have another school in its vicinity, as plans are already under way to establish one in Pawtucket. Each day brings reports of different cities which have either made appropriations or are considering the project of open-air schools, among which may be mentioned Chicago, Cincinnati, Columbus, and Elizabeth, N. J.

Open-air schools have already had some little effect on the regular public schools system. For example, the new Abraham Lincoln School of Boston, now in process of construction, is to have "health rooms" or rooms with large casement windows opening outward, leaving the rooms practically out doors.

Comparisons and Inferences

As has been shown, open-air schools of the several countries in which they are now found all agree in placing emphasis upon fresh air and dietetic treatment, and also upon more or less systematic and carefully regulated exercise. They have all introduced innovations into their daily programmes, reduced the number of children usually given to one teacher, thus securing more individual attention and consideration of particular needs, and they have relaxed the rigidity of ordinary school routine and encouraged family or communal feeling. Between the German Waldschule, however, and the latest exponents of this progressive scheme of education, there is wide divergence and it is interesting to note the points of difference both in the method of establishing and of maintaining these schools. England patterned closely after the German Waldschule, choosing picturesque country or forest regions and carrying out details with the same simplicity that characterized the German undertaking. The idea was adopted and put in practice by the school board *without extraneous aid*, except such as is customarily given to other municipal projects. English open-air schools, however, have thus far been restricted to warm weather months. America, in starting these schools, departed more radically from the German model. The German idea was followed in that they were started by educational authorities in co-operation with philanthropic societies, also in the matter of keeping open in the winter, even surpassing the Waldschule in this respect, as the intention is to carry on the schools throughout the official year. Work of the schools here, however, is in a more restricted field, being confined to tuberculous children, and carried on only throughout the length of the ordinary school day. Stress is laid only upon certain of the

hygienic principles involved, *i. e.*, fresh-air treatment and nourishment—no provision being made for baths, as in Germany and England, and the after-dinner rest or sleep period being reduced to a minimum, or, as in the Providence school, entirely absent, also exercise, work and play in the open receiving less attention as well as environment and the benefits to be derived from contact with nature.

In enumerating the factors conducing to favorable results in the fresh-air schools, may be noted fresh-air treatment, regulations of the dietary, in which attention is given not only to providing a sufficient quantity of wholesome food, but also to proper proportions of body-building material; the alternations of rest, work and recreation, stress being laid in most of these schools upon the necessity of a sufficient amount of sleep, the serious lack of which among children has been brought out by recent reports upon housing conditions; the opportunity for healthful exercise and play often lacking in thickly settled districts where playgrounds have not yet been established; the practical lesson, too, in cleanliness taught by regular baths, from lack of which the health of so many children suffers.

Apart from physical benefits which are indisputable, there is a pedagogical lesson to be drawn from results obtained in open-air schools, particularly from schools of the original Waldschule type. The fact that children can do the same amount of work in much less, sometimes in half the time, with increased energy and alertness, offers a strong argument in favor of applying, in the case of normal children, the agencies that have brought this about. The advantages of studying nature at first hand and of substituting live growing things for museum specimens or book descriptions, and of cultivating habits of observation, is apparent to every student of elementary education. The advantage, also, of substituting the natural activities of play and work for the more artificial physical exercises of the schoolroom is too obvious to need more than a passing mention. Less obvious but no less important is the subtle influence of forest and field upon the æsthetic and emotional nature of children, usually ignored in discussions of educational questions.

Notwithstanding the undoubted benefit derived from open-air schools, of course certain difficulties are in the way of the immediate realization of such an ideal on any large scale. The costliness and extent of our school plant, requiring an annual expenditure of over $65,000,000 at present, and the consequent impracticability of substituting a so radically different system is readily apparent. The whole school plant cannot be changed at once, but when new buildings are needed, there is opportunity for introducing the open-air system. The difficulty of

finding teachers adapted for the work is the most serious of all, and not to be underrated. On the other hand, the establishing of open-air schools is relatively inexpensive; and in the event of their being extensively adopted, the smaller expenditure necessary for buildings and equipment would leave a margin, allowing for the cost of meals and transportation, should this be assumed eventually by municipalities, permitting also the increase of the teaching force as well as of salaries, which teachers of superior ability and training and of ungraded schools command.

While the Waldschule and the English forest school approach more the ideals, and the Boston out-door school, though lacking some factors which seem most desirable, admits of a wider application, very likely the Providence school, still further removed from the type, entirely lacking every æsthetic and picturesque feature, nevertheless will be thought to have some practical possibilities not found in the others. The approach to the subject of open-air schools depends upon the interest of the individual in different phases of education, each advocate seeing in the present movement a significant point of departure. For one, it is the natural sequence in the establishment of a thorough system of school medical inspection, and an outcome of the crusade against tuberculosis, now become a school problem. For another, it is an effort to satisfy recent requirements in the matter of school baths, school nurses, and the feeding of indigent children, etc., or an achievement in line with the aims of the vacation school and playground movements. Again it may be regarded as an expansion of the "settlement" idea and characterized as by an American enthusiast who left these words in the visitor's book of the Charlottenburg school, "It is the best social effort that I have seen in Europe during a year of study and observation." Still again it may be thought to follow the growing tendency in different countries, so well illustrated in Germany by the Mannheim school system, to recognize and provide for the "pedagogically backward child," victim of physical defects, grading, etc., in distinction from the "mentally abnormal." There are even those who assume, notwithstanding an assertion in Germany to the contrary, that the establishment of these schools is related to the "school reform" movement and that a notable impetus has been given, though unconsciously, to the effort to substitute a less formal system of education for the present school régime. And not least important, perhaps, some educators see in the experiment an organized and comprehensive effort on the part of public school administrations for a "return to Nature," the need of which has been increasingly realized ever since investigations by European educators and

Dr. Hall, as to the contents of children's minds on entering school, showed such poverty of concept. The fresh-air school, especially in its ideal form, seems to be solving many of these problems, combining in one effort the factors that have separately demonstrated their efficiency.

What will develop as the type of American open-air school on further extension of the movement is an interesting subject of speculation. Having been so closely connected in its origin with the Tuberculosis Societies, it is possible that it may continue along the same line, and limit its efforts to providing for tuberculous children instead of extending them to children physically defective in other ways, but quite as much in need of more favorable opportunities for school life.

Though the medical aspect of the question is without the scope of this paper, it may yet be permissible to add a few significant facts to the subject as bearing on the future establishment of these schools. There is a growing consensus of opinion that the germs of tubercule enter the system in childhood. It is quite generally held, too, that notwithstanding the various tuberculin tests now in use the presence of the disease in children is difficult to detect. The theory, also, that anæmia is one of the symptoms of the disease has considerable support. Moreover, as tuberculosis is not generally infectious in its early stages, the presence of tuberculous children in the open-air school carries with it slight menace to the health of others.

The fact that so few reports of the foreign schools have been published in English and the accessibility of the Providence and Boston schools may tend to make them models for other American cities. It is quite possible, however, following Germany's and England's precedent, to break away more fully from tradition.

The Waldschule is a phase of a widespread educational movement which has found expression in such institutions as Abbotsholme in England, Ilsenburg, Haubindea and Bieberstein in Germany, besides schools in France and Switzerland and a number in our own country which lay special emphasis upon out-door life. It is an expression of the tendency to extend more generally benefits hitherto confined to children of the more favored classes.

This same tendency toward out-door education is illustrated by the very rapid increase in summer camp schools, beneficial effects of which have been noted not only in an increase of physical vigor, but in improvement in school work the following year.

Again in the crusade against tuberculosis just alluded to an effort is being made to establish out-door schools in con-

nection with some of the sanatoria for tuberculous diseases, in this country, as at the state institution in Glen Gardner, New Jersey. The need of providing for the schooling of children in institutions of the kind was especially felt in that state where children are admitted at ten, this being from four to six years earlier than they are admitted elsewhere. No appropriation has been made, but the teacher's salary, etc., is paid by clubs and private individuals. As in the day sanatoria for children in Germany which preceded the Waldschule there, no attempt is made in these institutions to keep children up to the grades of their home school, enough instruction being given, however, to ensure their not forgetting how to study, to increase considerably their fund of general knowledge and stimulate a desire for continuing in school after their return home.

Out-door schools are carried on also in semi-private institutions, as at the "Stony Wold Sanatorium", and at some of the hospitals for surgical tuberculosis. While New York has no open-air schools as yet, the school board of that city is furnishing teachers for a number of institutions for the benefit of tuberculous children. Among these may be mentioned Sea Breeze Hospital situated directly on the shore, conducted under the auspices of the "Society for Improving the Condition of the Poor"; a hospital boat run since December, 1908, in connection with Bellevue Hospital, and also one run by the Presbyterian Hospital of New York, since April, 1909, in which children spend the day, have regular instruction, following a plan which in principle is the same as the German Waldschule, short lesson periods, frequent recess and afternoon rest being the rule and diet, of course, receiving special consideration. The course of instruction ranges from kindergarten to eighth grade, some children never having attended other schools while others are there for a few months only.

Another institution which is akin in underlying principle to the open-air school is the French vacation school, an example of which is found in the Country Holiday Home at Contrexéville, opened in 1889. The idea originated with Dr. Graux, a Contrexéville doctor, and M. Dural, a member of the council of a Paris *arrondisement*, who, in carrying out their plan, worked in touch with school authorities. A disused château was purchased and additional buildings erected to accommodate two hundred children chosen from the poorest and most crowded districts of Paris, so that a three weeks holiday was given to a thousand children between the ages of ten and fourteen during the warm weather months. That as many children as possible might benefit by the outing, it was necessary that some should be withdrawn from school during regular term time.

Accordingly the method was adopted of taking those making least progress in their studies. Though no formal instruction is given, the plan has proved successful from an educational as well as hygienic point of view.

Other institutions, too miscellaneous to classify, nevertheless show an affinity to the examples previously mentioned. Within the past year our commissioner of Indian affairs has built a few experimental schoolhouses, which are merely screened in with wire netting above a solid wainscotting, thus giving some of the practical benefits of an out-door school, in the hope not only of lessening the spread of tuberculosis among Indians, but of mitigating also the feeling of imprisonment among Indian children.

The tendency to abandon precedent and substitute a less formal teaching out-of-doors for the usual schoolroom régime is further shown in Italy's plan for elementary teaching in the open for educating the illiterate youth of her provinces, lately adopted by the minister of instruction at the suggestion of Prof. Emidio Agostinoni. Fifteen "ambulant teachers," as they are called, have been appointed, who mounted on horseback ride into the mountains, collect their pupils wherever they can find them, and gathering them together teach them in the open. The plan has worked so well that not only boys but men attend, and old and young sit side by side in a class.

While it is impossible at this early stage of their history to draw inferences from results that can be stated statistically, personal observation impresses one with a sense of the value of these schools and of their great possibilities. Although impossible of immediate realization the whole lesson of the Waldschule points towards radical reconstruction in the future of the educational system along lines plainly indicated by results already attained.

In closing I wish to acknowledge my indebtedness to Dr. William H. Burnham for suggesting the topic and for help and criticism; also to teachers, officials and correspondents, whose courtesy has made this investigation possible.

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HOW INEBRIETY MIGHT BE PREVENTED BY EARLY EDUCATION

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At the recent convention of the National Society for the Study of Alcohol and other Drug Habits (1), not the least interesting feature was the consideration of the psychological characteristics of the habitual drug taker. That drug taking is a habit, needs no argument; but habits have psychological origins, and it is only by studying these that we shall learn to prevent the formation of the habit (2).

Now, the desire for stimuli, of which drugs are only one, proceeds from a psychological state of dissatisfaction, of discontent (3), or in a lesser degree, of vague discomfort, ennui, hankering. To terminate this feeling, a longing ensues, generally for some definite sensation or action, sometimes for nothing in particular except excitement in whatever form it be. Some extraordinary means have been adopted by patients to satisfy this longing, *e. g.*, one of Janet's psycasthenics would slowly drop boiling water upon her naked feet when the state of longing came over her (4). The scalding was more tolerable than the "blues". A very common reaction against the state of vague discontent felt by these patients is the '*fugue*,' which the French writers have described so fully. The wandering Jew, the mediæval type of this affliction, still exists to-day (5) on the continent of Europe; and in this country the same tendency to escape from one self and immediate surroundings is the basis of the mode of life of many a tramp and hobo. Sexual perversions, also, often originate in this way.

Vague discontent with one self or with the world around one, much more often than a real active desire for betterment, is the spring from which arises most of the mysticism of our own day, whether this is clothed in the form of the so-called saintly absorption, which was so common in mediæval times, or whether it takes the form, as is often the case nowadays, of adherence to a cult such as New Thought, Yogiism, Christian Science, or even reliance upon nebulously conceived hypnotism, mental suggestion and what not. The extent of the vogue these movements have acquired is due to their response to a very real need. The fact that they obtain this following, even though clothed in such absurdities, is due to the ignorance

of the laity about the laws of their own minds, and also to the modicum of truth which the doctrines of each contain. But they all tend to perpetuate incomplete conceptions, ignorance of the real man, and dependence upon the will of others, and the support of a figment of the imagination. In saying this, I am not endeavoring to belittle the real service they are doing to many a weary-minded mortal, but to point out that the modicum of good they accomplish is accompanied by much harm, and that their doctrines are a hindrance to the ultimate progress of humanity towards self-realization and power over itself and its environment. The records of any insane asylum, and indeed my own case-books, afford adequate proof of this.

A considerable percentage of a neurologist's patients suffer from no organic disease, but are in need of being shown how to manage their nervous life, and more particularly their emotions. And these are the people who, if by a happy chance they do not find the consulting-room of some one who understands them, end in drink, suicide, or the asylum. It was for such individuals that the mediæval church provided "The Retreat," during a sojourn in which the perturbed mind might find solatium for its distress, freedom from its too exacting environment, repose for its intellect, and decision in place of its hesitancy and doubt, and with it all a quiet though fervid orientation towards an inspiring hope.

This is the state of mind with which we have to deal in the unfortunate who is addicted to drugs; but the means of doing so cannot be touched upon without unduly prolonging this discussion. It is to its prevention I wish to confine myself. What then is its cause? We are learning this by our studies of genetic psychology (6), of the child as it grows, by seeing a trait in its first simple appearance in the infant, and tracing it to full maturity in its adult complexity.

The mother who seeks out every caprice of her child to satisfy it is laying the train for future explosions of uncontrolled impulse. The mother who neglects her child to the point of compelling him to seek amusement at all costs from any passer by and hence to discard everything which does not immediately please, is incurring many chances of her boy developing a habit of immediate satisfaction at all costs. Again, the parent who allows doctrinaire rigidity to alienate him from the sympathetic understanding of his child's innocent and harmless turbulence is driving him to seek elsewhere the modicum of solace which at least every child at times requires. A frequent outcome of this is the alternation of stoical self-suppression and outbursts of indulgence in what is believed to be wrong.

Whether the indulgences of states of feeling find their accen-

tuation in alcohol or whether they use some other aid is a mere accident of environment. This accidental nature of the response to longing is shown by the experiments of Pawlow (7) with dogs. Thus, by association of ideas, ringing of a bell could determine gastric flow, which could be again inhibited by the showing of a whip; and in turn any impression could be substituted for these and produce pleasurable or painful emotions as well as increase or decrease in the secretions. In another case of Féré (8), the attempt to force out of the house a dog suffering from agorophobia caused such terror that the evacuations escaped involuntarily.

In general, a habit-reflex forms, and the early indulgences are those which persist; but it must be remembered how much greater is a desire for spiritual sustenance and comfort when the stress of independent industrial life combines with the decline of youthfulness. Hence, the pathological indulgence of feeling in hurtful acts may be postponed quite late, although the pathological feelings had hitherto been there, though restrained by self-respect, religion, the sake of decency, or fear of the criminal law.

Psychological experiment shows how persons differ from day to day in mental capacity. Physiological experiments exhibit the difference in bodily secretions and in activity. Such oscillations are as true of the feelings, depending as these do upon bodily changes and mental impressions. Nearly all of us, then, must necessarily encounter phases during which our feeling is one of incapacity, even of ineptitude, discontent, dislike of our surroundings, anxiety, etc. To support these unpleasant states, a certain fortitude is required, unless one chooses to put an end to the state of feeling by some stimulus. The outcome of this course is the need for a very large stimulus to do away with a quite trifling feeling; for the power of resistance progressively decreases by non-use, especially when a ready satisfaction is within reach. The-immediate-satisfaction-of-desire-at-all-cost is a habit which can be made or unmade at the will of the educator; and it is towards this factor that the prevention of inebriety must be directed.

Even persons emotionally unstable may be readily taught to provide against the extra load this might mean. In this respect, the ancient religions showed themselves empirically more efficacious, for the reinforcing effect of active movement upon our thought is now an established fact. Will is nothing more than the balance of the concomitant stresses towards movement, and pedagogy has taught us that present methods lack wofully that dynamogeny without which education is a mere name. In this respect, the modern world has been injuriously dominated by the arm-chair philosophers, who have neglected the facts of life, and above all the genetic factor.

The notions of experimental science have not yet sufficiently penetrated the teaching of ethics. This has been left entirely in the hands of persons whose point of view is hopelessly vitiated by the artificialities of outworn conceptions of the universe and of the mind of man, which are maintained by the traditions of popular literature, academic philosophy and ecclesiastical dogmata and ritual whose nature precludes adjustment.

Moods and emotions, as Spencer (9) long ago showed, are the determinants of conduct. The direct power of idea and reason in modifying behavior has strict limits. However, the indirect effect is tremendous. Prevision, however, is the essential element of this control, and this prevision must occur before the formation of emotional habit. It is the very early years which form these habits. The perversion of infancy and childhood through the neglect by parents of the knowledge we have for guiding the disposition of a child is most reprehensible. The overthrow of the method of obedience to the arbitrary desires of a parent ignorant of the evolution of the child's mind has been followed by the equally obnoxious "laisser faire" methods, conspicuously shown in the United States, where emotions and behavior at least are concerned. The abolition of obedience as such has enthroned the immediate impulse as the ruling factor.

Unless education in ethics becomes as kinetic when applied to morality as it now is with regard to business and the law, it will continue sterile. To do this we must order the consequences of our children's acts in conformity with their powers of observation and inference. Where manners and morals are concerned, people act indiscriminately, conventionally, impulsively or indifferently, thanks to the apology for training they have received.

Again, the constant attempt to arrest the mental activity of the child by thwarting even his healthy impulses deprives him of initiative, and he becomes discontented, unless entertained by others.

This want of resourcefulness is a sure forerunner of ennui, of the loafing habit. To prevent this, method, as in the Universities, is more important than results. Didactically memorized precepts have no meaning to the childish intelligence; whereas education by deeds is pregnant with results. The events upon which the child has to base his inductions must be carefully chosen by the parent to conform to the limits of his intelligence, and of course must not be at variance with natural law; for example, when he shows cruelty to an animal, there is no real efficacy in telling him he is a naughty boy, but a great deal in presenting him with a pet able to resent and produce discomfort. Again, if he shows fear of an animal,

exhortation meets no stored memories upon which to bear, but the familiarity gained by fondling an animal which does not hurt soon substitutes a new emotional complex for that of fear.

The first, intermediate and last art, that of living in relation to others, is taught only in the most haphazard or arbitrary way, or entirely neglected. Is it not reasonable, therefore, to demand for this at least the beginning of a graded curriculum, in which examples must be worked out by the student and in which he is taught "rule" by "practice"? The ethics which is taught in the rule-of-thumb way of the average family is still that of rudimentary survivals. It is conspicuous for its poverty in such criteria of modern civilization as justice, liberty, courtesy, altruistic sympathy. The natural good impulses of the child are even artificially checked and twisted, his reasoning from cause to effect, where conduct is concerned, is neglected or obstructed; he is thus confused, and finally discouraged into sadness or indifference, and is bred into a despondent or happy-go-lucky man, ethically speaking. Even if knowledge and freedom are ultimately attained, it remains difficult to throw off the affective accompaniments of conduct first practiced under such brutish auspices (10).

The responsibility for the different attitude which the child observes in his parents towards moral questions as against others must be laid to the door of religion; for the sacro-sanct connotations of supernaturalism, which pervaded morality in days of ignorance and repression, have still survived, on account of the want of its scientific study and practice. On the one hand, we find a perpetuation into adult mental life of the helplessness and irrationality of the child; and at the other extreme is taught the inherent damnableness of human nature unless justified by faith. Need one insist upon the effect of either of these attitudes upon the cultivation of the power of observation, inference and of reasoning in general?

Its effect upon the sentiments has been even worse; for in the child of careless or indifferent mind, these qualities have been perpetuated by the attenuation of their results into a state of happy expectancy that the Lord will take care of his own. The second extreme will fall most heavily upon the child who is inclined towards over-conscientiousness. The neurologist almost daily is presented with examples where this morbid trend has been cultivated to excess by the religious atmosphere legated by the apostle of Geneva.

Now the cultivation of either the happy-go-lucky disposition or that of hyperconscientiousness is bad for that intellectual and affective poise which is the best safeguard against the psychological state favoring inebriety. A disposition towards carelessness is fortified by the constant leaning upon others;

the scrupulous disposition is fostered by misplaced reliance upon so-called intellectual determinants of conduct. To the child, these are meaningless; because they are mere symbols of something he cannot understand owing to want of motor experience.

That which makes a concept effective is its motor element; without this it is quite incomplete. It might nearly be said that an idea which has never been kinetic is impossible, that indeed the notion is not in consciousness; all that is there is the simulacrum constituted by the verbal image. A familiar example is the child's "chart in Heaven" which shows how little he was conscious of the real meaning of the Lord's prayer. The truth of this is implied in the old proverb, "example is better than precept", but the implication depends upon the fact that example can be understood, and hence rendered kinetic by imitation, while precept conveys comparatively small meaning. These experiences must not be forced at undue age, or the painfulness of their acquisition will bring disgust instead of pleasure. As accomplishment is learnt, the kinesthetic element tends to fall more and more into the background, and to be represented visually and auditorily; but it is nevertheless present, and once more emerges during states of mental dissolution. It is the real basis of knowledge; and the neural stresses entailed by its inhibition from activity have important functions in the associational processes. Examples abound.

Isaac Newton was at the foot of his grade at twelve. He showed neither ability nor industry. Charles Darwin was not at all a studious boy. He writes: "To my deep mortification, my father once said to me 'You care for nothing but shooting, dogs, and rat-catching.'" Rosa Bonheur in her eleventh year generally contrived to avoid the schoolroom and spent most of her time in the woods. When placed with a seamstress in order to learn to sew, she implored her father to take her away, which he did, and, much perplexed, left her entirely to herself, and Rosa, full of unacknowledged remorse for her incapacity and uselessness, sought refuge from her uncomfortable thoughts in his studio, where she learnt her art as a solace in play.

A vast majority of parents and teachers do not appreciate the tremendous possibility of character-building through play, and they try to subdue it in the child, thinking it is something he should overcome, forgetting that when the time comes, it will pass out of his life, and will do so as naturally and readily as the tail of the tadpole is absorbed when there is need of the legs of the frog. The hilarious enthusiasm of childhood and youth will in time develop into the eager

earnestness of the business man, the soldier, etc. As said Stanley Hall, "there is a sense in which all good conduct and morality may be defined as right muscle habits. As these grow weak and flabby, the chasm between knowing the right and doing it yawns wide and deep." As F. P. Robertson said, "doing is the best organ of knowing." This must become the dominant note in the pulpit itself as soon as the preacher seeks to know what the soul really is.

That this is being realized is shown by the playgrounds movement, which in Germany is used as a developer of the invention and creative instincts, and for the growth of muscle, mind and morals. In England, this is done in the national games, which are a part of the curriculum in the better secondary schools. In these games, the masters themselves not only supervise, but participate, and in this way encourage fortitude and the spirit of fair play, and restrain, or at least guide, the exuberance and natural brutality of the boy. As a matter of fact, phylogeny shows us that the most valuable lessons of life should be learnt in play.

But educators, unfortunately, think that they have discovered a better way than the natural one, and our little children were, and still are, forced against all instincts of life away from their play into schools, where in many cases play is rarely permitted. As a result they are suffering from arrested development of the will, as well as of the emotions and the intellect. No wonder Froebel insisted "Would'st thou lead the child in this matter, observe him. He will show thee what to do." The child in a palatial nursery may lead a life even less desirable than that of those in shops and factories. He, too, may miss the stages of differentiation only possible with constant reactions to healthy environment. Even though not stunted physically, he is certain to be so mentally and morally, for as James has said, "the boy who lives alone at the age of games and sports will usually shrink in later life from the effort of undergoing that which in youth would have been a delight.

And so with traits of character, they must become reflexes in childhood and youth, or the opportunity for their development will have passed." Otherwise we shall crush out characteristics upon which future strength depends and force the growth of untimely virtues, which will never become mature. Take pugnacity for instance? It is generally suppressed in modern education, which forgets that the good man is not the man who never fights but rather the one who does so, and fights for the right and in defence of the downtrodden. Similar arguments may be used with regard to selfishness, anger, cruelty, rude humor, venturesomeness and other so-called evils. As a matter of fact, the boy who cannot play, if he has had the op-

portunity, is not capable of work; for both work and play are merely the use of the surplus of energy after breathing, digestion, and circulation of the blood have been accomplished.

The superiority of play as against work in the development of a child's character is due to the interest it gives. This stimulates effort, without which development will be imperfect. Indeed, activity made without effort conduces to bad habits of action, slovenliness, and lack of will power, the want of forcefulness.

Regarding altruism, play is again the best developer. The small child cannot be selfish; he cannot see the need of co-operation. Group games will gradually teach this, for instance:—little boys have no acknowledged captain, but later, the efforts to play well and for the team to win, make necessary the subordination of certain individuals for the good of the whole; and so, first a temporary, and later, a permanent captain must be selected. From this, develops a respect for law and order, and the will to submit to discipline and amenability to the results of its infraction. The unselfishness thus derived is an active force in the future man's life; it is kinetic; Hence we can no longer say that knowledge alone is power; and we may say again with Froebel: "A comparison of the relative gains through play of the mental and physical powers would scarcely yield the palm to the body; justice is taught, and moderation; self-control, truthfulness, loyalty, brotherly love, courage, perseverance, prudence, together with the severe elimination of indolent indulgence."

Premature attention to the inhibition of motor activities in the development of man prevents the development of the psychological systems without which capacity cannot be attained. Resolution becomes permanently "sickled o'er with the pale cast of thought;" and, moreover, not only are the activities incomplete, but those which develop are incommoded by the constant fear brought by an over-active conscience. As James has asked, "how can social intercourse occur in the sea of responsibilities and inhibitions due to the self-centred horror of saying something too trivial and odious or insincere or unworthy of the company or inadequate to the occasion?"

Now the tremendous friction of a life of restraint upon normal activities causes nervous exhaustion; and this feeling is so painful that one really flies to what removes it. Hence, inebriety.

On the other hand, there is danger in the non-cultivation of inhibition (11), for impulsiveness then rules; and this meets with innumerable inducements to intemperance of all kinds. But its cultivation must not conflict with ontogeny, and above all must be kinetic.

It is from these two extreme types that are mainly recruited the intemperate. (12.)

Hence it is upon the study of morbid psychology that each and all must found their procedures if they wish to build rather on rock than on sand and to hew a step more in the advance of humanity towards the perfection it seeks.

The remedy is the teaching of mothers to form healthy emotional habits in their children. The happy-go-lucky absolutism which so often asserts itself as capacity is sadly defective as such a guide for hesitating childhood. The mind, the emotions, and their management into a morality, constitute the most difficult study and art. Woman's sphere is here, and is indeed a noble one; but instinctive motherhood has had its day. The women who aspire to bring up leaders of men in a nation which aims at future greatness must cease striving for vain things, and no longer confine their attention to superficialities, but do as their grandmothers did, and buckle too, modestly, thoroughly to an understanding of that fascinating complexity the heart and mind of the child.

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FEELINGS, THOUGHT, AND CONDUCT OF CHILDREN TOWARD ANIMAL PETS[1]

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Introduction and General Considerations. Nature is the great teacher of the child. Its function has usually been inadequately understood and its value as an educational asset, though recognized, has seldom been overestimated. The early years of training should include the learner's introduction to his physical environment—nature. Since education from the biological standpoint is "the superior adjustment of a human being to his environment," the task of the educator practically resolves itself into a careful selection and arrangement of the learner's environment, and the encouragement of and insistence upon an appropriate response on the learner's part. The aim of these years should not be primarily to know, but to love nature. But this love of nature is not to be acquired at a bound. It is, as Dr. Hodge says, "a thing of slow growth." It has its initiation in the child's love for some specific thing. From this small beginning it spreads by larger and larger concentric circles until he loves all nature.

Pets afford an excellent opportunity to introduce the child to nature and especially to animal life. An animal has sufficient personality to make a charming companion and friend, without the weakness of another child or the perplexing complexity of an adult. Moreover, the knowledge gained of the pet as a whole, its habits of activity and rest, individual characteristics and dispositions, mental qualities, affection for its master, its health and well being, is undoubtedly more fructifying and intrinsic than that engendered by any other method of instruction. This knowledge would count for dynamic development. This method would give the child more than a specious acquaintanceship with nature.

Since the beginning of history and doubtless before, children have wished their playthings to be in the shape of animals and the more realistic the resemblance the more pleased were the

[1] The present study is closely related to two studies previously made at Clark University. One was entitled: The Cat and the Child, by G. Stanley Hall and C. E. Browne, the other, Cyno-Psychoses, by W. Fowler Bucke. Complete reference will be found in the bibliography, No. 3 and No. 4.

children. Mrs. Jackson (19, 109) points out that many toys representing various animals appear among collections of ancient toys. It need only be mentioned that children of our own day, as well as those of historic and prehistoric times, love to have animals in miniature as playthings. When this love of the inanimate is supplanted by one for real things the natural result is love of animals.

Modern toymakers recognize that children evince a strong attraction for toy animals or playthings in which animals play a part. The dog, cat, horse, rabbit and the other animals familiar to children play an important rôle in the toymaker's art.

When children of school age are permitted to draw what they wish, it has been found that a large per cent. draw animals or pictures containing animals. Mrs. Maitland (22, 87) made a study of 1,570 drawings made by school children who had been given no direction as to subject. She found that one-fourth of the pictures by the little children contained animals. And it is probable that with children below school age the proportion would be still larger. Animals are always roaming about in the foreground of the child's consciousness.

Many considerations force upon us the fundamental significance of the pet to the plastic child. In emphasizing the importance of the pet animal in the child's education Dr. Hodge (16, 5) says, "The pet animal is thus for the child, as it was for the race, the key to the door into knowledge and dominion over all animal life. . . . Its fundamental character and value for education are evinced in the passion of children for pets ; and as in the race, so in the life of the child, it should be made the most of as a step toward civilization." Children are passionately fond of animal pets. Dr. Hall says, "Love of animals is inborn. The child that has had no pets is to be pitied."

Since animals play a leading rôle in the drama of child life, any reliable information on the subject is of value.

This study attempts, (1) to show some of the relations of age and sex to the kind of pet preferred and loved, (2) to ascertain what the cardinal factors are in determining this choice, (3) to show how the pet influences the moral, emotional, intellectual and volitional development of the child.

This paper is based on a study of 1,365 manuscripts of which 680 were from girls and 685 from boys. Ninety-six per cent. of these returns were from children eight to sixteen years of age. Part were compositions on "my favorite pet or animal and why?", the remainder were returns to two topical syllabi sent out from Clark University. A very few of these questionnaire returns were reminiscent papers from students in the

psychological departments of the State Normal School, Trenton, N. J., and the University of Alabama. The returns not reminiscences were from the normal school, New Paltz, N. Y., the normal school, Westfield, Mass., Hancock School, Detroit, Mich., also from schools in Toronto, Canada, California, Pa., Steelton, Pa., Newcastle, Pa., Niles, Ohio, Moorhead, Minn., and Amesbury, Mass.

The author realizes that this paper is based upon a comparatively small number of returns, and that the material came from widely separated localities. Yet a careful examination of this material reveals the fact that in essentials the returns are quite similar. Although further study in limited localities and with larger numbers might invalidate minor details, the author believes the manuscripts were fairly representative and that the conclusions drawn therefrom are essentially accurate.

Attitude and relations of primitive savages to animals. It is a well-established fact that the attitude and relations of primitive savages to the animal life in their environment are strikingly different than those of civilized man. Primitive man believed that everything in nature was endowed with life and powers like himself. The strange ideas fostered by this belief are, of course, reflected in their myths. Just as we are apt to overestimate the complexity of mental processes of animals, the savage, for reasons widely different, ascribes to animals powers of thinking, feeling and acting infinitely more complex than they actually possess.

Both in fable and folk-tales animals are represented as carrying on elaborate conversations. This in folk-lore is exemplified in Joel Chandler Harris's (15) Stories of "Brer Rabbit." "To the ear of the savage," says Im Thurn (18, 351), "animals certainly seem to talk. This fact is universally evident and ought to be fully realized."

That magical powers are also attributed to animals is clearly shown by Leland's (20, 213) legends of the "Amazing Adventures of Master Rabbit." Savages also represent animals as possessing recondite wisdom and as being moved by the same motives as human beings.

The savage has a genuine sense of his kinship with animals. They are not merely his brothers but his "elder brothers." Uncultured peoples do not recognize the difference implied in the phrase "men and animals". They believe in the transformation of men into animals or animals into men or even gods into animals. Leland (20, 31) has taken down a saying of the Algonquin Indians which declares that "In the beginning of things men were as animals and animals as men."

On animals he depends for the greater part of his food and

clothing. He slays them for food or profit but not for sport. To them he looks for help and guidance.

From the belief in his own descent from some animal to a belief in the sacredness and mystery of animals was an easy step and explains why animals figure so largely in his worship. He often placed his tribe under one or another totem animal.

To the primitive savage, then, there is no demarcation between man and beast. The difference recognized by the uncultured peoples is not in the psyche but in the soma. It is not surprising, when his primitive notions and beliefs are considered, that his attitude toward the animal creation is one of almost divine reverence rather than haughty superiority.

Relative popularity of animal pets. One of the questionnaires sent out excluded the dog, cat, and canary from the list of pets. Papers in answer to the other questionnaire, in which the dog, cat, or canary was the favorite pet, were rejected. Of the 1,365 reserved manuscripts upon pet animals the proportion is as follows: horses, 25.4%; rabbits, 17.6%; chickens, 9.0%; parrots, 7.1%; squirrels, 6.2%; pigeons, 6%; birds (excepting parrot and canary), 5.5%; ponies, 4.6%; lambs, 3.9%; monkeys, 2.7%; crows, 2.6%; fish, 1.8%; cows, 1.6%; white rats and mice together, 1.3%; goats and raccoons, each 0.9%; ducks, 0.6%; guinea pigs, 0.5%; toads, 0.4%; turtles, 0.3%. A very few preferred the donkey, opossum, fox, frog, fawn, ferret, coyote, goose, porcupine, chameleon.

The foregoing figures show, at least tentatively, the relative popularity of these animals. The amount of spontaneity involved in the choice of pets could not be ascertained and taken into account. The table does, however, form the basis for a crass comparison. In a comparison of the popularity of all animals the dog, cat, and canary would undoubtedly occupy first, second, and third rank respectively with the horse, rabbit, and the rest following as indicated above.

Relation between age and interest. The statements in the next paragraph are based on a census of the 1,365 manuscripts and will serve to indicate roughly and tentatively the relation between age, sex and interest in the various pets.

Boys' interest in and love of horses gradually and rapidly increases from seven to sixteen. Girls' interest follows rather nearly the same curve with greater fluctuation with age. The decided increase in the popularity of the horse with both sexes at puberty is based largely upon the recognition of its intelligence. At all ages boys' interest in rabbits exceeds that of girls', and is greatest at seven, while girls' interest culminates at ten and then declines. Boys' interest in parrots is much inferior to that of girls' and gradually declines from nine. In striking contrast the girls' interest rises until fifteen, when

interest in the horse and the parrot are approximately equal. Children's interest in chickens does not appear to increase after the seventh or eighth year but rather to decline. Here, as with the parrot, the girls' interest is superior to that of the boys'. Boys' interest in pigeons seems to be slightly superior to that of girls' and appears to culminate at fifteen.

The rabbit is pre-eminently the boy's pet and the parrot the girl's pet. Among children seven years of age the rabbit seems to be the most popular pet, and at sixteen the horse is most frequently the favorite.

With the advance of age revolutionary changes occur in the child's attitude towards the pets of former years. A few years often reverse his likes, dislikes, and preferences for pets.

The horse is increasingly valued as the child grows older; the rabbit and chicken lose their charms. At seven years old nineteen per cent. more children choose rabbits than horses, while at sixteen thirty-nine per cent. more choose horses than rabbits.

Young children prefer animals that they can hold, carry, cuddle, and fondle as pets. As the children become older, animals with more marked intellectual and emotional characteristics appeal to them more strongly. A horse or dog is more of a companion and friend than a rabbit, chicken, squirrel or pigeon. Although the pets designated last really have more individuality than a casual observer would be willing to admit, the individuality of the horse or dog is more strongly marked.

The child's relations with a rabbit are far simpler than with a horse. A few minutes two or three times a day will be all that is required by the rabbit. The horse is not only dependent on his master for food, but for exercise and companionship; he is always as eager for the ride as the boy or girl, always pleased and apparently appreciative when any attention is paid him.

The pets which appeal most strongly to the youngest children are those having qualities which to a greater or less degree satisfy their craving for agreeable sense impressions. As age increases the importance attached to the pleasure due to sense impressions distinctly tends to decrease as a motive for either preferring or loving a pet. The oldest children lay emphasis on the pleasure due to the satisfaction of some emotional and intellectual desires. The social aspect of pets is more important now than at an earlier age although it is never entirely absent.

The horse. The evolution of the horse is more completely known than that of any other of our domesticated animals. The ancient natural history of the horse can be traced back through the Pliohippus of the Pliocene, the Miohippus and

Mesohippus of the Miocene, and the Orohippus of the Eocene to the five-toed, loose-jointed ancestors of our mammalian series in the first stages of the Tertiary period.

The horse shares with the dog the distinction of coming closest to man. But as man's direct assistant, and one might say ally, the horse stands alone. Other domesticated animals have done much for man but no other creature has been so inseparably linked with man in his triumphs in sports, in war, or in peace. That the horse has indelibly stamped itself upon human history is disclosed by the almost unbroken line of references made to it in the story of the human race on its way up toward civilization.

The bodily strength of the horse has always been of great value to man, and it was with the aim of obtaining his strength that he was domesticated. The influence that the horse's strength has had on men's thoughts is indicated roughly in the oft-repeated use of the epithet "horse." "Horse-chestnut," "horse-mint," "horse-radish" are instances of the application of the term to plants in which strong qualities are present. A trace of this original utility of the animal is kept in our use of the term "horse-power." Doubtless the animal which constantly measures his strength with man must feel himself near and dear to humanity; must, in fact, believe himself nearly, if not quite, man's equal.

The various periods of the life of horses are very different. It is the fate of most to be petted, pampered, and kept in clover to their knees when young and to be disregarded and neglected work horses, fed on the coarsest hay and treated to a profusion of blows, when old. Not so the horse that has been or is a family pet. How different might be the fate of nearly every horse could the youths of the land have some association with horses, or even other animals, as pets.

There were 347 returns on the horse. Of this number 169 were from boys and 178 from girls. There were also 63 returns on the pony. Of these 26 were from boys and 37 from girls. The essential likeness in the data from these two animals led the writer to group and study them together. Therefore the following section of the article is based on a study of these 410 manuscripts, 195 of which were from boys and 215 from girls.

Food and Feeding. Children mention the pet horses' food 302 times. In the returns 66 children fed their pet horse oats; 42, hay; 33, sugar; 29, corn; 27, apples; 23, grass; 21, bran; 14 gave them water; 12, candy; 5, different grains; 4, salt; 3, potatoes; 3, cake; 2, bread; 2, tobacco. The following were specified once each: carrots, coffee beans, ice-cream, bananas, wheat, straw, rye, pie, Pratt's food, sugar water, cab-

bage. Only girls mention salt, cake, coffee beans and ice-cream. Boys alone specify grains, cabbage, straw, rye, bananas, pie, Pratt's food and sugar water.

The significant thing in this section is not how many children fed their pets oats or hay, but the rank of sweetmeats and all things children care for as compared with the staple foods. More than one-fourth the enumerations refer to foods which children are especially fond of. This section represents only the younger children's ideas as to what the pet's food should be, for the older ones seldom allude to this phase of the subject.

Activities. Activities were referred to 475 times and 60 different activities are mentioned.

Running 55, neighing 46, jumping 35, kicking 29, playing and biting, each, 26, prancing 25, pacing 23, trotting 20, following 19, eating out of hand 18, galloping 16, coming at call 13, rolling and trotting, each, 9, "kissing" 7, pricking up ears 6, walking, and standing on hind feet, each, 5, eating 4, balking and "shaking hands", each, 2. The following were designated once each: "lies down to sleep", "puts head on my shoulder", "chews and pulls blanket off himself", "licks my hand", "snorts", "rubs her head against my shoulder", "opens sliding door to go to oats bin", "pushes me with his nose", "prances when happy", "can cakewalk and waltz", "jumps ditches with me on her back", "would come to house and put feet on the porch", "shakes or nods its head", "fights with other horses", "runs races with the dog", "can shake hands with me and kiss me", "pretended to bite", "neighs piteously if she sees another horse abused." Children take great pride in recounting in detail the tricks their pets can perform. Activities were mentioned under this rubric 54 times. Almost all that follows is condensed and epitomized from lengthy accounts. Those enumerated only once are given fully. The following are what the child regarded as the brightest trick:

Shakes hands with fore feet 16; unties himself, will reach in your pocket after an apple, stands on hind feet and opens gate or stable door, each, 5; begs for sugar 3; catches you by coat-tail, "kisses me", and puts his nose in pocket, each, 2; while the following were mentioned once each: "Unties himself and turns the water on and gets a drink", "takes fruit out of my pocket", "chews the rope so he can break loose", "tries to get the keys out of my pocket", "jumps ditches with me on his back", "kneels for me to mount", "would come around to the front door after papa had bridled and saddled him and he would wait until I got on", "can tell how old he is", "pulls off your coat buttons."

The youngest children mention the simplest activities of the horse, *e. g.*, running, jumping, rolling, kicking. The tendency to ignore the natural activities and recognize the complex and acquired ones increases with age.

Cesaresco (7, 6) believes that the principal characteristic of the horse is his extreme nervous excitability. At the slightest touch, sound or gesture he starts to run. The one real enjoyment of a horse is running. He runs merely for the pleasure of it. The horse is a traveller by nature.

Moral Qualities. The qualities of the horse which the children gauge as moral are the following: Obedient 45, knows right from wrong 34, does not scold 21, never runs off 15, does not fight 12, never bad 11, does not swear 8, never cross, and ran away once, each, 5, naughty sometimes 4, would not bite, cross when it lays its ears back, good tempered, and never threw me off, each, 3, while the following expressions were each used once: "Does not scare", "balks if he hears an engine", "has no bad habits", "has no mean tricks", "cross if teased", "scolds with its ears when I whip it", "scolds when I pull his ears", "scares at engines", "cross and cranky", "sorry if it did wrong", "I think it realized the necessity of good behavior when I rode her", "will obey if spoken to kindly", "will do right if treated properly", "mean in some ways such as kicking and running off just for fun", "never bad in earnest." A boy fifteen years old says, "my horse was cross once because he bit the back out of my pet rooster."

Horses are, as a rule, almost perfect prototypes of children in their good and bad qualities. According to the children's reports, horses are more or less timid and good and but rarely bad, yet there is a diversity of opinion as to what are good and bad traits. In the minds of these children obedience ranked first as a moral trait. Belief in a horse conscience is stronger than was the case with the rabbit. The curve of belief reaches the maximum at twelve.

Emotions. The child's emotional response to the horse was expressed by 28 saying "I love it", 13 lonely when away from it, 7 happy on returning, 4 sorry when he was sold. The diversity and depth of feeling this pet elicits and the strength of attachment are depicted by the following quotations: "Sorry to see him go", "he shall be in my mind forever", "If she should die I would feel very sorry", "I shall always remember him", "would always go and pet it as soon as I returned home", "I get homesick when we are apart", "I believe I would die without him", "proud of King", "the only *real* pet I ever had."

F., 16. Fond of impersonating a horse.

F., 16. I patted his nose, put my arms around his neck and told him how sorry I was.

M., 16. Would not sell him for any money.
F., 13. If I am sick and cannot get to see it, I have it brought up to the window.

The returns show that when the pets were sold, the children were very solicitous about the new home, care and treatment they are likely to receive.

The wealth of this emotional reaction is further shown in their reasons for preferring horses as pets.

The sympathetic attitude of children toward the abused horse, whether their pet or not, is a striking manifestation of the better side of child nature. They are indignant even if harsh words are used. I subjoin a few typical expressions of this character. "It pains me to see them abused", "I hated to give him pain", "I feel that the horse should never be treated cruelly", "a horse likes a kind word as well as a man", "I think that a horse should be treated with as much respect as a civilized person", "I think people ought to be good to horses", "about the only time I really get mad is when I see animals abused, and I often think that the abused animals know more than the people who abuse them."

Sully (32, 249) thinks this passionate sympathetic attachment of the child to the animal is the outcome of the widespread instinct of helpless animals to band together for mutual protection. He records the following incident (32, 249): "A mother once remarked to her boy between five and six years old: 'Why, R., I believe you are kinder to the animals than to me'. 'Perhaps I am', he replied, 'you see they are not so well off as you are.' "

There can be little doubt that these outpourings of love and sympathy which the child gives to animals are the outgrowth of the gregarious instinct and based upon the similarity of position and need. This position has been supported by both Sully and Compayré.

The child's interpretation of the horse's affection for him is unique. Twenty-two interpret this response as love for them (children), 6 say their pet horse is fond of children, 6 "lonesome without me", 3 sorry when scolded, 3 sad when spoken to harshly, 3 as showing pity, 2 happy if spoken to cheerfully. The subsequent expressions were used once each: "Sorry when I left her alone", "tries to kiss me", "affectionate to people they like", "he loved to be petted and caressed", "grateful when you would wash her."

The following will serve as representative types of the statements given as proof of affections:

M., 13. He shows his love by putting his nose on my shoulder very affectionately. M., 14. She loves me because she licks my hand and kisses me. F., 14. He likes me because he licks my hand and

rubs his head against me. F., 14. The reason I think he loves me is because I take good care of him. F., 13. It shows its love for me by kissing me. F., 12. He loves me because he used to rub his nose against me. F., 11. He loves me, I know, for he kisses my hands and face and puts his head on my shoulder and neck. F., 17. Showed her fondness for me by neighing when I came near and by pretending to bite and by laying her head on my shoulders.

Some of the children do not believe the horse really loves them. But the idea that their pet horse loves them seems to be deeply rooted in the minds of most of the children. The sense of touch seems to play the leading rôle in the proofs of affection.

Miscellaneous Excerpts. F., 15. A look of sadness which would have made your heart ache came over her face when she saw she was to have a cruel driver. F., 14. If I was crying he would look at me so pityingly out of his large black eyes. M., 11. I think it misses me for it always seems so glad when I come back. F., 16. She loved little children and would let them play around her feet without offering to kick them. M., 15. By rubbing it a certain place on its back you can tickle it and it will put its head to one side and make its lips go as if it were laughing. M., 16. Shows fear by shaking all over. M., 15. Stamps his feet and lays back his ears when angry.

Scheitlin, who is quoted by Brehm, observes that "the horse is susceptible to almost every mental emotion. He loves and hates, feels the promptings of envy, revenge and caprice." The horse resembles a human being in being very susceptible to fear. He is thoroughly awed by lightning. He perspires from fear during a thunderstorm.

Boys and girls have noted this great susceptibility to fear. They have observed some of the causes and signs of fear. They have noticed, too, how fear interferes with the pet's normal activity and have devised means of dispelling it.

In addition to love, joy, sadness, fear and pity, many children believe their pet horses show jealousy. The pet horse was jealous if another horse or some other pet, especially the dog, was petted.

Intercommunication. Almost all children grant that their pet horse could not read, sing or make music, although one boy asserts that his pet could "read your face when you are mad." Another boy thought his pet made music by neighing. A girl fourteen years of age says "he could not make music but could make noises." Most children believe that their pet horse could not talk, while some just as emphatically aver that they could talk "in their own way." A large per cent. of the youngest children imagine that the pet could talk. Some are convinced that their pet has the ability to converse with other horses but not with man. Well-nigh all are confident that the pet could understand every word addressed to them and some maintain that they answered with certain actions of head, ears, eyes or feet.

I add a typical list of their expressions.

F., 14. Horses can talk to themselves but people cannot understand them. F., 12. She can tell me when she is hungry. F., 15. I imagined my pet would say "come here," "no" and "yes." F., 15. I don't suppose that my pet can talk but I suppose the horse across the alley and our horse could talk to each other. F., 15. I thought he understood all my caresses and kind words. F. 16. He could not talk if talking consists of forming words and sentences, but he could by actions. F., 16. I think he asks for things when he whinnies. M., 16. Understands as well as a person. F., 16. Could understand a great deal I said to it. F., 11. He understands my language and would do what I said. F., 13. When I would talk to her it seemed as if she understood what I said and would shake her ears and wink her eyes as if she understood it all.

Names. The name of the pet horse was designated 144 times and 71 different names were given. Of the above number a few were given by a former owner and others by a friend. But the majority were named by the children.

A brief consideration and indication of the sources from which the names were derived is both interesting and suggestive. Some names were from stories heard or read, *e. g.*, Black Beauty, Captain, Topsy. Others from some peculiarity, *e. g.*, Glass Eye (one white eye), Stella (star in forehead). Some allude to size as Babe, Cricket, Jumbo. Another class are named for national heroes, *e. g.*, Grant, Sherman, Dewey. A different group refers to color, *e. g.*, Pluto (black), "Roaney." The time of receiving the pet is mirrored in another class of names, *e. g.*, May, Patsy (St. Patrick's Day). Such names as Queen and Prince emphasize the element of nobleness. Favorite names make the largest class and include such common names as Tom, Dick, Harry and Charlie. The last and most interesting group consists of names suggested by character and temperament, *e.g.*, Foxy, Firefly, Dandy, Kit (gentle as a kitten), Ginger. Besides these formal appellations a great number of endearing names were used.

"Names," says an old maxim, "are things." From the few enumerated we readily see that to the child they are replete with meaning. Names are potent influences. The child is from early childhood a namer of things. Probably the delight in naming things is a survival of the satisfaction derived in the early tussle with the difficulties of language, and partly due to the childish idea that everything has or ought to have its own individual name. To name their pet is to place their own label upon it, to make it distinctly their own. Certainly it requires the exercise of psychical powers appropriately to name an animal, and whenever possible the child should have the opportunity to do so.

Benefit derived. Very few returns make any mention of the

good resulting from having a pet horse. The statements that were made were usually by the older pupils. These references group themselves naturally into four rubrics. (1) The largest number refer to the pleasure derived from riding, driving and from merely possessing a pet to lavish their affections upon. (2) Those referring to the promotion of health since their pet afforded them the means of getting fresh air and enough exercise. (3) Initiation and growth of a bond of fellow-feeling is here interpreted to be the good derived. (4) The last class consists of miscellaneous benefits and allude to developing responsibility, suppression of the inclination to do mischief, driving away loneliness and affording a playmate.

To elucidate this topic I quote a few terse statements under each sub-head.

Pleasure: F., 9. My pet makes me feel good because I can play with him. F., 16. Source of much enjoyment. F., 16. Gives me pleasure. F., 11. Gave me the pleasantest days I have ever had. F., 17. Gives me pleasure in riding and in merely petting her. F., 17. Helped to make my childhood pleasant. *Promotion of health:* F., 13. He did us good by taking us riding. F., 15. She did me a great deal of good for after I had the fever the drives helped me get strong. F., 14. Took me out in the air and made my health better. M., 14. Made me stronger and healthier. M., 16. It did me a good bit of good when I would ride. I got the fresh air. *Sympathy:* F., 16. Established a bond between all lower animals and myself. F., 14. Taught me to be good to animals. M., 14. He has done me good for he taught me not to abuse pets. M., 13. Taught me not to be cruel to animals. F., 16. I learned more about the nature of animals from my pet. *Miscellaneous:* F., 11. It is company to me. F., 15. Talked to him as if a playmate. M., 14. The pet did me lots of good for it kept me out of mischief. F., 14. Gave me something to care for.

Reasons for preference. Of the 410 children preferring the horse as a pet, 139 gave definite reasons for the selection. The horse was preferred by 29 because of its usefulness; 17, because they can be ridden; 15, intelligent; 11, because they can be driven; 9, affords pleasure. Because they are strong, 7; gentle, noble, tame, affectionate, each, 5; faithful, active, nice to pat, lively, each, 3; companionable and obedient, each, 2. The subsequent reasons were given once each. "She seems more nearly human than other pets," "particular about itself," "you can have fun with them," "because he can understand what I say to him," "has always been my favorite pet," "because he will shake hands," "so pretty," "so small and cute," "because I can feed it," "I can play with them," "I take care of her," "he is my pet, I own him," "like to tend to them" and "like to care for her."

Interest in the horse's intelligence. The mental peculiarities of the horse are much less characteristic and pronounced than its physical. Scheitlin (quoted by Brehm) asserts that the

"horse has the power of discrimination in matters pertaining to food, domicile, space, time, light, color, shape, his family, his neighbors, friends, foes, animal companions, people and objects. He has the gift of perception, imagination, memory, and manifold sensations induced by a number of conditions of body and mind." It is the common opinion that the horse is endowed with much sagacity, but generally the experienced and careful observer finds the intelligence of the horse to be quite limited. He is, however, a good observer and in some rude way classifies objects. Most horses retain a tolerably distinct memory of the roads which they traverse.

Most children share the popular opinion as regards the horse's intelligence. Children are most interested in the horse's memory, which probably is the most marked mental quality. Many references are made to his memory. According to the returns the child thinks the horse remembers: his old home, which is his stall, for what he is punished, who treats him kindly or cruelly, and the many turnings in a path. The expression "very intelligent" is employed repeatedly in speaking of the pet's mental powers. They affirm that their pet knows its mate, its name, when meal time arrives, and who is driving.

F., 16. They know when you are cross or when you are pleased and act accordingly. M., 11. Knows when she has to work. F., 12. Knows when it is time for her meals. M., 12. Remembers what she is whipped for. F., 11. It was a long time before she forgot her old home. M., 14. Horses know their mate's step, and when one is driven single and the other hears it coming it neighs. F., 14. I believe a horse never forgets a person. They remember who treats them kindly and who treats them cruelly. F., 14. I was riding real fast one day and fell off and he came back where I was and waited for me. M., 15. I am sure that if I could find out what my pony's thoughts were, I would be very much ashamed of myself. F., 15. He never forgot me. After an absence of six months I returned and when I stepped from the train and spoke his name he turned and came to me.

Characterization. The child's thoughts, feelings and reactions to the pet horse are in a degree shown by the adjectives he uses in designating the pet. The dissimilarity in characterization is conspicuous. Judging from this diversity, no two horses are alike. One is vicious, tricky and false, the other docile, obedient, peaceful and gentle. It seems that children sum up the good or bad qualities of the pet in a single word.

Intelligent, was the descriptive term used by 69; gentle, 66; nice, 20; affectionate, 16; strong, 15; happy, 13; faithful, 10; noble, 7; spirited, 6; clever, 5; lovely, 4; jealous, 3; patient, tame, obstinate and tricky, each, 2; while the following were mentioned once, each: Playful, peaceful, beautiful, sly, lazy, meddlesome, rough, easily insulted, proud.

Illness, Death and Burial. A horse may reach the age of forty years and over, but often is so ill treated that he is old at the age of twenty; rarely does he live to be thirty years old. The relatively longer life of the horse as compared with the rabbit, chicken, cat, etc., accounts for a decrease in the number of references to the death and burial of pet. It is also probable that the largeness of the horse's body influences the reactions of children. Although the children did not usually perform elaborate burial ceremonies, there was always a real sense of bereavement and unalloyed grief. In case of sickness the horse doctor was usually called.

M., 15. My horse was ill one night. I guess it had sore throat. I got some medicine and rubbed his throat. The next morning he was all right. M., 14. She was only sick once. The doctor came every day. One day he lanced her under the chin and I washed it every day until it got better. M., 15. When he dies he will be buried under a large oak tree in our back yard. M., 14. I suppose he went to heaven. M., 14. I buried him in a nice grave in the woods. M., 13. It is still living, but when it dies I will see that it has a good grave. F., 14. Several years later Cap took sick and had to be killed. I remember when we went to say good-bye to him. I believe he really understood. His eyes looked so pitiful. But since he could not be cured it was better to kill him than to keep him. His suffering was then ended. M., 12. He had sore throat. My sister and I would go to the barn and cry. We were so sorry for him. F., 14. It is not dead, but if it would die I would bury it in the finest kind of a way and would never forget it. F., 11. Beauty is still living. When he dies I will have him buried in my little graveyard in the back yard. F., 13. When he died I would not let them take him where they took the other horses, but had him buried in the hollow.

The Rabbit: Food and Feeding. This section is based on an examination of 241 papers, 156 of which were from boys and 85 from girls.

Interest in the rabbit's food is much in evidence, perhaps because the rabbit is usually confined and has no way of satisfying its hunger. Hence a great deal of interest is shown and very much genuine care exercised in supplying the pet rabbit with all sorts of food. Often the pet receives just the food that it should not have. That anthropomorphic ideas of food and feeding still exist is proven by the long list of foods, ranging from wholesome to the most unhygienic kinds.

Definite reference was made to the rabbit's food 216 times. Cabbage and clover divide the honor of heading the list, both being mentioned 41 times; apples, 23; grass, 13; corn, 10; potatoes and oats, each, 8; plantain and milk, each, 7; carrots, bread and milk, each, 6; hay, lettuce and dandelion, each, 5; turnips, 4; celery and bread, each, 3. Two children mention wheat, parsley, water, radish, meat and candy. The following designations were made once each: Tomatoes, beans, grain,

meat, sugar, crackers, coffee, salad, "force", rose leaves, carnation leaves, weeds, fruit, bark of tree, everything.

The different kinds of food mentioned number 38. Only girls mention weeds, bark of trees, carnation leaves, fruit, crackers, sugar, meat, candy, "force". Boys alone mention beans, coffee, tomatoes, parsley, rose leaves, potatoes, wheat, and salad. One girl 10 years of age tells of using a spoon in feeding the pet rabbit. She says, "when my rabbit was small I fed him with a tiny spoon, as he was too small to eat for himself."

As girls become older they strike on new foods for the pet, and sometimes these are artificial foods. The returns seem to indicate that girls have a greater interest in the pet's food than boys.

Activities of the Rabbit. The children's reports concerning things that the rabbit can do show to what a striking degree they are interested in the spontaneous activities of the pet. References to the activities of the pet are more numerous, voluminous, and varied than any section of the subject. They are not only intensely interested in the activities due to the pet's spontaneity, but also in those which they have trained the pet to perform and those in which their presence is an important factor.

The most commonplace and insignificant movements of the pet are charming and attractive to the child. He attaches much importance to the most insignificant actions and positions. The children here show themselves to be close observers of movement and position.

The older children seem to enjoy those activities most like their own and are especially fond of training their pets to perform activities similar to their own. The younger children's interpretation of movements and postures often show traces of the anthropomorphic instinct.

Reference was made to the motor activities of the pet 305 times as follows: Standing on hind feet 36, sitting on hind feet 34, playing 31, jumping 25, running 22, digging 20, eating 13, washing its face with fore paws 11, kicking 10, eating out of hand 9, playing hide and seek, and fighting with chickens, each, 8, coming when called 6, leaping over hand, and stamping with hind feet, each, 5, washing its face after eating, runs away, jumping into lap and eating, jumping through arms and hoops, and over sticks, each, 3. The following phrases were each used by one child: "Plays catch with me", "plays with our baby", "jumps on my back", "shakes hands", "meets me after school", "fights chickens", "tries to run up your leg", "comes into the house and sits in my hand", "eats with front paws", "gnaws big holes in the carpet", "jumps

upon a big box", "comes to back door and scratches till it gets something to eat", "runs after me when I run", "scratches on the door when it wants to come in", "would run after a string and piece of paper until he was tired out", "comes up stairs to my bedroom", "crawls over me", "sits on my shoulder", "tried to catch the pigeons", "race each other around yard", "teases the chickens", "pulled bark off our peach trees", "runs around me in a circle", "fights with cats", "jumps over the fence", "plays with other rabbits", "sits on papa's knee", "he gets up in the chair and rolls all up like a cat", "jumps over the cat's back sometimes", "played tag with the cat", "runs and nestles under the foliage", "would follow me to school", "holds things in its paws", "plays with a rubber ball", "chased the cats out of the yard", "runs at our heels and tries to bite our shoes", "squeaks sometimes."

F., 13. Pulls books from the bottom shelf of the stand and chews the leather.

F., 11. When you would smack your lips it would look up into your face.

F., 10. Smells around papa's pocket for candy. If he has any and Dick smells it, he sits up and begs for it.

Children (7-9) tend to mention the natural activities of the rabbit, *e. g.*, running, jumping, eating, nestling under foliage, washing face, digging holes, jumping over fence and playing with other rabbits.

With older children (9-12) natural activities conditioned by their presence plays a rôle, *e. g.*, "playing with me", "runs under my feet", smelling around pockets, licking hand, etc.

The oldest children (12-15) are very apt to mention acquired activities, usually tricks they have taught them to perform, *e. g.*, leaping over stick or hand, "begging", "playing hide and seek", or with rubber ball, following to school and jumping through hoop, etc.

This section of the study alone is not a true index of the child's interest in the activities of the pet, for only those expressions in which the motor element predominated were grouped under this sub-head. In many expressions the emotional, moral, or some other element predominated. Such expressions were not dealt with here. The most of these studied here are what the child regards as unusual. Hence, to get an adequate conception of the magnitude of the child's interest in "What it could do" the whole study must be considered.

Moral Qualities. The moral qualities ascribed to the rabbit are very crude and reflect the child's standards of right and wrong.

References to moral qualities are as follows: Never swears 28, never bad 25, does not scold 24, does not fight 23, obeys

12, knows right from wrong 12, fights sometimes 10, never cross 7, bad sometimes 6, does not run away 5, cross sometimes 4, sorry if he does anything bad 2, while the following were each mentioned once: never mad, behaves good, ran away once, "does not like it if I scold", "acts right when I go away".

Comparatively few references are made to the moral qualities. This is explained by the fact that very few children above eleven years of age mention moral characteristics.

The life of the rabbit is so simple that the child can judge the moral qualities, but the interpretation of the motives and conduct of an adult human being are too complex for his small brain. For the child, the rabbit is a masterpiece of simplification. This is true of the emotional and intellectual aspects of its life as well.

Pets are not always good. Some are never bad, but a few of them have days or times when they deviate from what pleases the child. Yet the child usually gives a reason justifying the bad act. The rabbit never scolds and is cross only when not fed enough or "when their babies or noses are touched." Sometimes they fight but not until provoked by cats or chickens. One case in which the pet was interpreted as scolding was explained by saying that it scolds "only when it is cross."

That children revolt against incessant "nagging" is apparent from the number that project negatively the qualities of scolding and crossness. The attitude of the child towards scolding and crossness is a reflection on parents and teachers. Boys and girls attempt to live up to their reputation.

Belief in a rabbit conscience is present only with those below ten years of age. Both boys and girls between the ages of seven and ten believe explicitly that their pet rabbits "know right from wrong", but both sexes above ten make no reference to this point. Almost all these qualities are the result of the child's anthropomorphic instinct. They reveal the dominant ideas in his moral consciousness. Evidently children think it wrong to swear, scold, fight, and get cross or mad. The tendency of children to objectify what is subjective, to interpret their psychic life outward is patent in this section.

Emotions. The child fears neither rivalry nor exaction from his pet, and it is to this friend and comrade he most fully and frequently opens his heart. Upon his pet he lavishes the treasures of his affections.

The emotional attitude of the children towards the rabbit was expressed by 69 saying "I love it"; by 20 saying "I feel sorry when I leave it"; 18, Felt lonesome when away from it; 13, were glad to see it on returning home; 8, were very sorry

when it died. Others said: "I feel mean and sorry when it is not with me", "Glad when it got well", "I think the world of it", "When away I feel like coming back and playing with it", "Cried when it ran away", "hated to part with it", "I will be sorry when it dies", and "loved it better than anything or anybody around the house".

In expressing their interpretation of the rabbit's emotional response, 45 said "It loves me"; 15, "Sad when I go away"; 12, "Glad when I return"; 4, "It pities me". Others said: "It liked me after I doctored it", "I know it feels good when I return for it runs and jumps and climbs on my lap", "It was glad when I took it into the house when ill", "It was happy when you don't scold", "It was sorry when I scolded it". *Proofs of affection.* Most children were not content to say that they were sure that their pet loved them, and gave what they considered proofs of affection.

M., 8. My pet loved me for it would rub against me.
M., 13. I know they loved me for when I go to them they will try to get into my arms.
G., 10. When I sit on the floor he comes and lies down beside me.
G., 11. My rabbit loves me because she will rub her head on my cheek.
G., 13. I think it loves me for every time it sees me it springs to me.
G., 8. It loves me for when I come home he always runs as soon as he sees me and jumps up and kisses me.

The vigor of the outgoing impulse of affection is indicated by the fact that the child refers to his affection for his pet more frequently than to the pet's affection for him.

Usually the child's first contact with the animal community results in vague fears. These alarms are for the most part transitory and soon there springs up an intense fellow-feeling. The animal world becomes fascinatingly interesting. He comes to love his new acquaintances. But why should he be so keenly interested and evince such feeling?

In a biological sense the child is nearer the animal community than that mature human society, which is so apt to be less sympathetic and companionable. In the animal he discovers needs, desires, and a love for, and response to, caresses analogous to his own. There is a close parallelism in their lives. The hiatus between the child and grown people in general is greater than that between the child and animals. To him the animal is a miniature human being; human nature reduced in dimensions. We should naturally expect him to sympathize with beings which resemble him in so many respects. Compayré (9, 194) says "To resemble one another is to love one another". It surely is because of this resemblance that he so ardently loves his pet and is so charmed with its companionship.

It is through sympathy that social integration is mainly accomplished. Sympathy unites all; animals of different species and widely different habits are drawn together by this potent though gentle bond, and when man extends sympathy to them they all harmonize and blend in his more comprehensive nature. Sympathy is the magic key into the affections of animals. The sympathetic motive has been fundamental in the highest development of mankind. The work of domestication has not only afforded a channel for the exercise of this altruistic impulse, but the winning of these creatures from the wilderness has been potent for the extension and amplification of this same impulse; and as in the race so in the life of the child, animal pets will foster the growth of love and sympathy.

Intercommunication. Almost all concede that the rabbit does not sing, talk or read, but a great number contend that they understand at times and under certain conditions. Although nearly all believe that communication between themselves and their pet rabbit impossible, most believe that the rabbits can communicate between themselves. A few interpreted the danger signal as a means of intercommunication between the pets. The curve of belief in the rabbit's ability to understand and communicate, although prominent among the youngest children, declines rapidly with age.

F., 7. I am sure it understands me.
F., 7. It understands me when I scold.
F., 8. My pet rabbit understands me sometimes.
F., 9. It could talk rabbit fashion.
F., 9. I imagine it says come play and romp with me.
F., 10. I know when they squeak that they want something.
M., 12. Rabbits talk by hitting the ground. As far as I know they hit two times on the ground which means danger.

Rabbits certainly do communicate. They practice the type of intercommunication that Morgan (24, 244) calls indicative intercommunication. Of course their system of signs is not very elaborate. The rabbit's danger signal is indicative of an emotional state. The boy who said "rabbits talk by hitting the ground" approached the scientific statement of the matter very closely.

Names. The names given the rabbits group themselves into three classes. (1) Those relating to some physical characteristic including color, size, eyes, strength, *e. g.*, Snowflake, Snowball, Tiny, Wee Willie, Pink Eyes, Sambo, Frisk, Tricks. (2) Those suggested by some mental characteristic, *e. g.*, Dude, Queen, Prince. (3) Common favorite names, *e. g.*, Fannie, "Jackie", Pet, Harry, Nellie.

Color seemed to be the most influential factor in naming the pet from some physical characteristic.

Twenty-five per cent. of the pet rabbits had no name except Bunny.

The child attaches much importance to the naming of his pet for he regards it as a distinct personality.

Benefit Derived. Comparatively few make any mention of the benefit derived from their pet. The estimation ranges from pure utilitarian evaluation to the creation of happiness. The benefits most often cited are immediately or remotely connected with pleasure.

F., 10. When I was weary it would come and play with me. It has made me very happy sometimes.
F., 11. It made me happy.
F., 12. Kept me from being lonesome.
F., 14. Makes me good.
M., 12. Kept me from being sad and lonely.
— —. Makes me very happy when I am alone.
M., 14. Comfort on rainy days and when I was sick.
M., 12. I can sell them for two dollars a pair.
— —. Had some babies, I sold them.
M., 13. Gave me lots of fun.
F., 11. It amuses me.

Some interpret the benefit they derived as a lesson in kindness.

F., 10. I learned a lesson of very many kind acts from it.
F., 10. I learned to be gentle and kind.
F., 12. Taught me to be kinder to dumb animals, also that they have feelings as well as we have.
M., 10. Taught me not to hurt any other pet.
M., 13. Taught me to be kind hearted.

Reasons for Preference. Of the 241 preferring the rabbit as a pet 90 gave reasons for the preference. The rabbit was the favorite pet for 16 because it was so pretty; 11, because it was a present; 9, because it was so tame; 7, so nice; 6, cunning; 4, clean; 2, so innocent looking; 2, so interesting; 2, nice eyes; 2, so white; 2, they will play with you. The following reasons were given once each: "Because I love it", "never had one before", "cheaper than others", "because of their soft bodies and their helplessness", on account of their nice fur, because they would not run away, "can play with it", because of their pitiful ways, "because they are so sweet", on account of their lovely fur, because it was a pet, "their fur is so soft", "because it has soft fur and pink eyes", "they are nice and it does not take much to keep them", gentle and appealing in their ways, nice to feed and play with, "beautiful, gentle and tame", "because I never had any pet so cunning, small and pretty", "so soft and silky", "because it is so beautiful and has such a beautiful white furry back and its ears are so prettily pointed and it has the cutest pink eyes."

Preference for white rabbits with pink eyes is very marked. The reasons for loving the pet and for preferring them to others are very much intertwined.

Responsibility. The normal child seems to be willing to be held responsible for the care and treatment of his pet. Not only is he willing to assume this sense of responsibility, but he takes pride in, and derives pleasure from, the work. Further, a large number of children appear to be dissatisfied if any one else gives any attention to their pets. Of course we need not believe that every child, who voices his eagerness to attend to his own pet, always lives up to this ideal. The child's real affection for his pet is revealed by his attempts, futile and successful, to make it happy, contented and comfortable.

In these returns the children felt themselves most responsible for supply of food, regularity of feeding, cleaning of hutch, and the provision of adequate protection from animal foes and the cold.

I subjoin a few of the children's statements.

M., 9. Never forgot to feed it.
M., 9. I feed him three times a day.
M., 13. Built him a large pen. I always take good care of him.
M., 11. I left it sleep in his cotton bed in the sitting room when it was cold.
M., 12. I'm going to make a new cage for winter, so they don't freeze.
F., 10. I hid it under my dress when a dog chased it to me.
F., 9. I watched so some cruel dog does not get it.
F., 11. When it was quite young I put it in my doll's carriage in the daytime and at night I put it in a cradle.

The returns force home the conclusion that the sense of responsibility becomes keenest with complete ownership of the animal. When the child knows the pet is absolutely his own he feels bound to attend to its wants. This attitude is obvious especially among children between nine and sixteen.

One writer (34, 45) thinks that it is better to have the pet suffer some neglect than to diminish the responsibility for their condition. Surely little children cannot and ought not to be entirely responsible for any living creature. It is often more trouble to supervise their care of the pet than it would be to do it for them; but when we consider the strong bond of affection and the responsibility that may be developed, we certainly will concede that a little judicious sympathy and direction ought not to be withheld. A child, before he is desiccated by the repressive machinery of modern civilization, is surrounded by manifold spontaneous and many-sided interests. If left to himself he often becomes a complete monomaniac for a time and either forgets his pet altogether or attends to it in the most careless manner. It is cruel to subject him to the poignant self-reproach that will follow as soon as he realizes that he has neglected his pet and friend.

Parents can steady and assist the child in faithful care and

proper treatment of the pet. Such aid and sympathy will promote the acquisition of habits of order, thoughtfulness, and self-control. The child's spontaneous activities in caring for his pet will be a potent factor in moulding his character and will exert a civilizing and humanizing influence on his conduct and attitude towards his fellow mortals as long as he lives. The acquirement of orderly habits is a desideratum and there is no doubt that they come more readily with a sense of responsibility.

Illness, Death and Burial. Since children are usually ignorant of scientific methods of feeding and caring for the rabbit, we should reasonably suppose that the pet rabbit would often be ill. Sometimes "real" medicine was used in illness, but more often milk, water, grass, and other foods were given as medicine. Others when sick were taken into the house and sometimes put into a "nice warm bed"—the doll's cradle. Rags and salve were applied to cuts and sores and splints to broken bones.

The average life of a rabbit is comparatively short. Therefore it would seem probable also that a large per cent. of the children would have experiences in witnessing the death of their pet rabbit. In fact nearly every child mentioned the illness, death or burial of their rabbit. About twenty-five per cent. of the children have undergone the unpleasant experience of having their pet die. Death was usually natural, but sometimes the rabbits were killed by dogs, cats, foxes, weasels, poison, or a "bad boy".

In most cases of death there was much genuine grief and a keen sense of bereavement. The body was always buried with more or less ceremony. These burial ceremonies were characterized throughout by inordinate attention to painful details. The whole experience has its nexus with the establishment of an almost indelible remembrance of the pet's life and its associations with the child. This section, though more spontaneous and specialized than any other section, shows the child's unwillingness to part with his pet and is another evidence of attachment.

F., 8. When it was ill I put it in a nice warm bed.
F., 11. One of my pet rabbits fell and broke its leg. We had it in splints for about a year. We dressed it about once a week.
F., 13. Brought it into the house and wrapped it up and put it to bed.
M., 11. Sick, did not know what to do, so I gave it its dinner; it recovered in a day or two.
M., 12. It got its foot cut and I put some salve on it and wrapped it up.
M., 13. Put medicine in its mouth.
F., 10. I buried it where no one will ever bother it again.
F., 11. I buried it in a glass box.

F., 11. Made a grave, put it in a box and buried it and put a little board at the head of it with a verse on.

F., 11. When it died we buried it in the garden; we always put a plant on its grave every year.

M., 12. When it died I buried it and put stones around its grave and a large stone at the head.

M., 12. When he died I had a funeral for him. I made a box and put Bunny in it and buried it.

M., 10. When any young ones died I made a brick vault under the ground. I put them in a cigar box and put them in the vault and put flowers on them.

F., 12. I thought it went to heaven when it died. We had a funeral also. My sisters and I prepared the grave and casket, which was a pasteboard box.

F., 14. The next day I dug a hole in the ground and buried it and put flowers on its grave as long as I stayed on the farm.

F., 10. I had a funeral over it. Blanche and Hazel were the ones that carried the body. I had it in a pasteboard box. We took strings and put them under the box and lowered it into the grave. There were about ten at the funeral and we sang and then put the dirt over the grave and made a cross. We put the cross at the head of the grave and pulled some flowers and put on its grave.

F., 13. After I had it about a year it died. I put it into a shoe box and put flowers all around it and then I put the lid on it. Then I covered it over with dirt and I heaped it all up with dirt just like a grave and then put a large stone at his head. When it was dying I put water on its head and it looked up so pitiful at me, but it died and I often went into the garden a purpose to see its grave. I often cried over its death because I loved it dearly.

Paleontological and Anthropological Notes. The rabbit belongs to the cosmopolitan genus Lepus, family Leporidæ. Remains of existing species of this genus have been found in the caves of Europe and Brazil, while extinct species are found in the Pliocene of France, in the Siwaliks of India, and in the Miocene of America.

The tame rabbit has been domesticated since a very ancient period and almost all naturalists believe that they are descended from the common wild rabbit. Probably the time of domestication differed widely in different regions. They were domesticated at an early period in China, for Confucius regarded rabbits among animals worthy to be sacrificed to the gods.

The influence that the rabbit has had on the childhood of the race and the attitude of primitive peoples toward the rabbit is reflected in their folk-lore. As a rule each race has its favorite rogue animal—Malays and Dyaks, the deer and tortoise; various tribes of American Indians, the turtle, coyote, or raven; Bantus, Mongols, Coreans, and Negroes, the rabbit or hare. The rabbit occupies an important place also in the mythology of the peoples who do not recognize it as their rogue or hero animal. The truth of this assertion is manifest if we examine the folk-tales of South Africa, the French Congo, Tibet, India, and those of the red Indians,

especially the Algonquin, Caddo and the Pawnee. The African folk-tales represent the rabbit as competing with the elephant, hyena, and lioness. In the mythology of India and Tibet the rabbit contests with the elephant, wolf, hyena, lion, sheep, and in American Indian tales, the mountain lion, turkey, wildcat, and coyote, all are deceived by the shrewdness and cunning of the rabbit. The humor of all these stories is exquisite and the end in almost every case is a victory for the rabbit. The folk-lore of the old plantation consists largely in telling how Brer Rabbit successfully tricked the other animals. Mr. Harris (15, 9) says "it needs no scientific investigation to show why he (the negro) selects as his hero the weakest and most harmless of all animals and brings him out victorious in contests with the bear, the wolf, and the fox. It is not virtue that triumphs but helplessness; it is not malice but mischievousness." The rabbit mirrors the life and conditions of the negroes so well that it has almost become their totem animal.

Chicken: Food and Feeding. In the 124 manuscripts on the chicken, 35 children fed their chickens corn; 17, corn meal; 12, wheat; 10, oats; 9, bugs; 8, bread; 7, water; 5, worms; 4, potatoes; 3, grain; 2, grass. One boy said he gave his pet some pebbles to eat. We notice, in comparing this list of food with the one in the foregoing section, that the variety of foods is not so great. Again by comparison, we note less evidence of anthropomorphic ideas of food. Probably both these differences are due to the fact that chickens have more freedom and are not so dependent on the child for food.

A number say that they themselves always fed the pet and recite at length how the pet eats from their hands. Much of the child's attachment to the pet chicken springs from this close association at the time of feeding. A girl nine years old says, "No food was too good for him. He received the best of everything right out of my hand."

Activities. The sprightliness of chickens is very interesting and attractive to children, especially so to the youngest children. Here, as in every other section of the paper, the pristine attractiveness of movement is evinced.

The 55 boys and 69 girls make special mention of the pet chicken's activities 178 times, as follows: running 26, crowing 24, flying 22, fighting 19, eating 14, singing 12, scratching 10, laying eggs 9, jumping and walking, each, 8, picking 6, sleeping and cackling, each, 5, clucking 3, sitting on shoulder, flapping wings, each, 2. Each of the following expressions were used by one child: catching flies, talking among themselves, catching bugs.

Children mentioned the following as the "brightest thing" their pets could do. "Will fly upon my shoulder" mentioned

by 20. "Will fly on my head" referred to by 16. "Stands on my head and crows" by 2. Eating out of the hand of the child was considered by 30 as a remarkable performance.

The only games mentioned were "hide and seek" and "tag."

Moral Qualities. The moral traits ascribed to the chicken are the following: Never bad 15, would fight 11, never ran off 10, knows right from wrong 9, does not scold 7, not cross 7, obedient 6, never fights 5, does not swear 3, would not scratch and would not bite, each mentioned once.

The children who mention the fighting of the pet allude to it in a way that gives the impression that they would not fight without compulsion. The fact that many of these pets were only chicks explains the small number of allusions to fighting.

Pet chickens were said to be bad when they scratched in the flower beds or when they went into the garden after food. Nearly all who said their pet knew right from wrong gave their reasons for thinking so, one of these follows: "I know it knew right from wrong, for it would hide in the tall grass when it saw me coming to chase it out of the garden."

Emotions. In giving expression to their affection for the pet chicken, 20 children said "I love it," and 32 said they were sad and lonely when they could not be with their pets. Sympathy for a crippled, motherless, or abused chicken often led the child to become attached to it and make it a pet. A large per cent. of the children who report they had chickens for pets were below ten years of age, and nearly every one loved to hold and fondle them. Some children loved the newly hatched chicken most on account of its coat of down, which gave pleasant sense impressions when it was held.

F., 7. I love to hold my chicken. F., 8. I loved them because they looked so pretty, innocent, harmless and did so many cunning things. F., 9. When I was scolded I would run in some quiet place with my pet and it would seem to say "I am sorry." F., 7. I loved it so much that I insisted on taking it to bed with me. F., 14. My love for animals is akin to my love for children. F., 13. I love to hold them and look into their eyes.

In the child's interpretation of the chicken's affection, he repeatedly translates the simplest actions as the promptings of love. It seems that all are certain their pet chicken loves them, but no one refers to the pet being sad or lonely without them. The succeeding are specimen expressions given by the children as evidences of attachment.

F., 8. I think the chicken loved me because when I would put it down it did not want to go away. F., 11. It loved me too for as soon as I would sit down on the lawn or porch it would come running up to be petted and curl up in my lap. F., 12. It loved me because it would follow me.

Intercommunication. Fifty per cent. of the children reported the pet could understand what they said. Nearly one-fourth of these children have the opinion that "chickens talk among themselves". Chickens are capable of revealing certain emotional states. In a way, this emotional speech, consisting of various calls and cries, is recognized by children as appropriate. They have observed that certain sounds mean fear, distress, agony, and that others denote exultation, astonishment, attention.

Names. The names given the pet chicken may be roughly grouped into four divisions. (1) Those suggested by physical characteristics including size, color and maimedness, *e. g.*, Midget, Speckle, Goldie, Toppy, Crippy. (2) Those referring to mental characteristics, loneliness, lordliness and fussiness, *e. g.*, Lonely, Lady Whiting, Proud, Prince, His Majesty. (3). In this group the heroic idea is emphasized, *e. g.*, Dewey, Wellington. (4) This last division consists of names used because they were short, common, or favorite ones, *e. g.*, Billie, Sallie, Dick, Bessie. The last class of names is the largest and "Dick" seems to be the most popular name, being mentioned the most frequently.

Benefit Derived. Most children seem to be unconscious of the benefit they derive from their pets. They have been so happy and contented with them that they have failed to consider the good resulting from their companionship. But from those who have set down their interpretation of the benefit it seems to be patience, industriousness, kindness, the development of responsibility, happiness, and an acquaintanceship with some of the peculiar habits of the pet.

F., 7. Taught me to be kind to animals. F., 12. Taught me the weakness and helplessness of animals. F., 11. My pet did me much good. I learned some of their peculiarities. F., 12. Gave me something to care for. F., 15. Taught me to be patient and industrious. Mother would often ask me why I worked so hard at certain things and I would say, "Poor Joe works hard so will I." M., 10. Made me very happy and gave me much amusement. He was also company to me.

Reasons for Preference. Almost sixty per cent. of the children give in clear concise statements their reasons for preferring the chicken to other animals as a pet. It was preferred by 12 because it would eat from their hands; by 11 because they were good fighters; 10 because they were nice to feel; 9 because they were so small; 8 because of their prettiness; 4 so cunning; 4 because it could crow; 3 lay eggs; 3 because they like to feed them. The following were each used once, "so intelligent," "was a present," "because it could sing," "was so tame," "Will jump on my hand", "be-

cause it has queer habits", and "because it likes me best." The sex differences are quite marked in this section. The girls, especially the younger ones, prefer the chicken because they like to feel their soft downy feathers and feel their feet clinging to their hands as they caress them. To others the graceful rounded form is extremely enticing. The boy's pet chick was usually a rooster and his fighting qualities were especially attractive to him. The boy was exceeding proud if his pet cock could "lick any other cock in town".

Illness, Death and Burial. The treatment and care given the pet in illness; the tenderness and grief at the time of and following death; and the respect shown for the dead bodies at the burial ceremony; all attest the genuine attachment existing between the child and his pet chicken. Nearly all returns mention the illness of the pet and the painstaking care taken in "doctoring" it. Coal oil, castor oil, and pills made of salt and pepper are among the remedies used. Among the frequent mention of accidents the most serious one was a broken leg. This was cared for by putting on splints. Disease or accident always occasioned anxiety.

About forty per cent. of the children have undergone the unpleasant experience of having their pet die. Death in most cases was due to old age. Following the death of the pet the child passed through a period of loneliness and often genuine grief. Preparations for an appropriate burial ceremony, which was often elaborate, were made with unaffected and befitting gravity. The selection of the grave site, the casket, carriage, pall-bearers, mourners, markers, and monument all received careful attention. Just before burial flowers, candy, ribbons, and all sorts of pretty things are sometimes put into the casket to be buried with the body. Flowers were frequently kept on the grave till frost came. No phase of the reports called forth a more spontaneous response and as the treatment here given has been altogether inadequate to exhibit the child's real feelings I quote a few of the many narratives verbatim.

F., 9. When it died I felt as if I had lost a playmate.

F., 10. When Rosie and Bennie died my brother and I buried them in the yard and put flowers on their graves.

F., —. When it died I cried as if my heart would break. I had a special burial for it, with coffin, carriage, and headstone. I buried it in our garden under the rose bush, where it liked to lie on a hot summer's day. Each day I would put fresh flowers and leaves on its grave, thinking that he could see me doing it.

F., 11. When it died I put it in a little pasteboard box, placed candy, ribbons, flowers, and every pretty little thing I could find in the box with it. One of the boys dug a grave in a nearby lot and one day several of my playmates and myself took it there and buried it. On top we planted flowers.

F., 9. She had a large funeral. All the children in the neighbor-

hood attended in mourning apparel, that is, anything they could get that was black. We erected a headstone to mark the burial place. The stone may still be seen in the back corner of the yard, but the lettering that was scratched on it has been worn off.

F., —. I immediately began to make preparations for his burial. The grave was dug in the greenest spot under the huge apple tree in the garden; its coffin was a fancy candy box with a large red rose on its cover; the gravestone was a piece of wood on which was carved the name "Crippy" and the day of his death. The coffin was lined with soft green moss; Crippy was laid gently in while many of my little playmates stood around, for they too were lovers and admirers of Crippy. We each placed a daisy in the coffin and the cover was shut down; Crippy was lowered into his grave and covered. No words were uttered—there was only silence as befitted so sad and solemn an occasion. The grave was covered with wild flowers in the midst of which was one large rare rose. It was kept well supplied during the summer and even until late in the fall when there were no more flowers.

M., 12. I have a burying ground for my pet chickens. Three are buried there now—(1) Wellington, (2) Bully (ex-champion of the hen yard), (3) Billy (the one His Majesty killed). They all have gravestones of wood slabs and each bears an epitaph. Billy's is as follows:

Here I lie
Vanquished by a foe,
After a five minutes' fight
I was laid here below.

Parrot: Food and Feeding. The parrot was preferred as a pet by 106 children,—86 girls and 20 boys. The kind of food given the pet was reported 106 times. Some children seem not to be interested in what or how the pet parrot eats, while others devoted much space to telling of the various kinds of food their parrots ate. Most children enjoyed feeding their pet as it perched on their shoulders. Crackers was referred to 22 times; sunflower seed, 20; water, 10; bread, 7; coffee, 5; milk, 4; apples, fruit, cake, peanuts, wheat, each, 3; lettuce, bananas, hemp seed, potatoes, candy, ice cream, each, 2; while the following were mentioned once each: salad, celery, hard boiled egg, coffee, soup, biscuit, flower seed, everything except meat.

Activities. The unusual activities of the pet parrot were mentioned by 106 children 262 times. Talking was mentioned 66 times; singing, 28; swearing, 22; whistling, 20; laughing, 17; flying, 14; screaming, 12; biting and scolding, each, 10; playing and climbing, each, 9; shaking hands, 5; jumping, crying, walking, mocking, and running, each, 4; sitting on shoulder, reciting, and kissing, each, 3. The following are each designated once: Catching mice, trying to sing, pulling hair ribbon off, catching rats, pulling tacks out of carpet, "pulling mamma's dress", pulling shoe buttons off, swinging, trilling, "flies upon sideboard to look at herself in the glass, knocks the dishes down and then laughs when she hears them break," "tries to catch the cat's tail."

Brightest trick or thing: F., 16. Could sing "Mary had a little lamb." F., 13. Plays "hide and seek." F., 11. The smartest thing it could do was to "tell on" my brother and I. F., 10. Could sing part of "America". F., 13. Playing with a ball. F., 12. The brightest thing I think he could do was when my father was letting on he was whipping me he would holler and scream and after that when my father went over to the cage Polly was so excited that he wanted to bite him. Then my father would put his arm up to the cage and Polly would get a hold of his coat and think it was his skin and he would bite very hard thinking that it was my father's skin.

"Hide and seek" was the most popular game but "peep" and "catcher" were frequently mentioned.

Moral Qualities. In essential details the moral qualities attributed to the parrot are similar to those ascribed to the other pets. The chief difference to be noted is in the reference to swearing.

Knows right from wrong, mentioned by 21; obedient, 17; swears, 11; does not scold, 10; bad sometimes, 8; scolds sometimes, 6; never runs off, 5; cross sometimes, 5; never bad, is cross, scolds and swears if teased, never fights, each, 3; never cross, 2; never lies, mentioned once.

Emotions. The child's emotional attitude toward the pet parrot may be summed up as love and sympathy for the pet and loneliness without it or when away from it. Some said they did not feel right when they were away from it. Forty-seven said "I love it" and 36 said they were lonesome when separated from it.

F., 14. I never liked to go away any place for I missed him so much. F., 14. I love my pet because it is so tender-hearted and sweet. F., 13. I cried like a baby when it died.

Children are confident that their pets love them and that they miss them when they are gone. Thirty-four said "I know it loves me" and 20, that it misses me when I am away. The pet is said to sympathize at times. They are sometimes afraid in the dark, sad if scolded, sorry after doing wrong.

F., 10. I know it misses me when I am away for it will not eat, sing or talk. F., 11. It shows its love by jumping on my shoulders. F., 12. He loves me because I do not scold him. F., 13. I think she loves me because if I take her out of her cage she will fly to my shoulder and rub her head against my face and say "Is polly pretty?" F., 13. I think Polly loves me for when I was in the country last summer mamma sent for me to come right home. I had only been away two weeks. She said that Polly would not eat anything and would sit on one end of her perch and call for me all the time. When I got home I went to the cage and opened the door, and Polly came out on my shoulder and began to talk as if she was glad to see me.

Reasons for Preference. Sixty-nine per cent. of the children possessing a pet parrot gave reasons for the preference. It was preferred by 27 because it could talk; by 5, because it could understand; 5, because it could laugh; 4, because they could

talk back; 4, so amusing; 3, a good companion; 3, on account of beautiful feathers; 3, so comical; 3, because you can teach them to talk and laugh; 3, because they are good company; 3, because you could have more fun with them than with any other pet. Two children preferred them for each of the following reasons: because they could whistle, so intelligent, present, so smart. Because they were cunning, so nice, because they could do more things than any other pets, and because it was yellow, were given as reasons once each.

In eighty-one per cent. of the returns on the parrot, the parrot was the girl's pet. An interesting phase of the reports here is that the parrot's continual chatter, which was so attractive to the girl, was sometimes exceedingly disgusting to her brother. From the standpoint of the boy the parrot is often the most tormenting creature living. In these reports when the parrot was the boy's pet it was preferred and liked because it was so funny, amusing, and because it could talk back at them. The youngest girls preferred them for their beautiful variegated feathers, the older girls because they could talk.

Illness, Death and Burial. As it is exceedingly dangerous and often fatal for a parrot to eat meat or green vegetables it is reasonable to suppose that a majority of the children would have some experience with a sick parrot. The returns confirm the above hypothesis for the parrot is often ill, with a cold, from over-feeding or from unwholesome food. In most cases the child administered home remedies, but sometimes the bird doctor was called.

If the pet died it was buried fittingly. A few children preferred to have them stuffed so they could keep them.

An interesting strand of child thought which appears not infrequently is that of safeguarding the inanimate body by burying it in a way and place where it would not be injured.

On the whole the attitude of the child toward the parrot's illness and death, the preparations for the burial and the ceremonies of burial are not unlike those we considered at length under the rabbit and chicken. So, without additional comment I subjoin some representative statements in the words of the children.

F., 12. My parrot was out in the yard in summer and he ate some green things which made him sick and I gave him some medicine and he acted very queer. He would shut his eyes and make a funny noise. I was worried very much but after a good deal of attention he got well. F., 13. One day I noticed she was breathing very hard and had taken cold. So I greased her with lard. M., 11. It had a severe cold. I gave it nearly everything but sulphur was the only thing that helped it. F., 13. I buried her after she died and she is still there in the corner of the yard. I planted a little rose tree on

her grave and it blooms yet. F., 14. He died about a year ago and we put him in a box and buried him in our yard under the peach tree. F., 13. When it died I was very sorry and my friends and I had a funeral for her. My brother dug a hole in the ground for us and we wrapped it in a white cloth and put it in a shoe box and covered it over with dirt and its grave with flowers. F., 13. When she died I buried her in grandpa's yard and put a stone there in remembrance of her. M., 12. He was buried in the wood lot on the farm and my uncle placed this inscription on the tree over his head. "Here lies Dick the talking parrot." F., 16. My cousins and I buried it in our garden. We picked wild flowers to put on its grave. F., 15. I put her in a box of cotton and buried her in the yard. F., 14. If it would die I would either dig a grave for it or have it stuffed so that I could keep it. F., 12. It is not dead but it will be buried where no one will hurt it. F., 15. He died Tuesday, October the 28th. I was so sorry and cried as much as I would if some of my friends had died. I loved my parrot and I know it loved me. We had a nice little coffin for him. One of my friends brought him some nice wax flowers. My mother bought him some of the sweetest flowers she had. We buried him in our yard in our flower bed. Oh, how I wish I could see my dear Carlo! His grave is as nice as some people's graves. We got him a little tombstone last week. It had precious reading on it.

Minor and Unconventional Pets. The child's attitude to the pets which follow the parrot in the table (page 208) will not be studied in detail because of the small number of manuscripts. Only a few general remarks will be made concerning some of them in the succeeding paragraphs.

The squirrel was preferred by most because of its cunning ways, nimbleness, beauty of form and manner of eating. In case of its death the child missed it as he would a playmate. Nearly all noted that the squirrel was provident. The almost ceaseless activity of the pet squirrel makes it an exemplification of industriousness.

In these returns compassion for a wounded or homeless pigeon often lead the child to make it a pet. Pretty plumage, feeding out of hand, and refined manners were reasons for preference. In the minds of these children fantail pigeons have come to stand for dignity and vanity, and the carrier pigeons for loyalty to mate.

A perusal of the papers on the uncommon pets (crow, raccoon, toad, turtle, opossum, frog, porcupine, chameleon, etc.) has led the author to the opinion that the children who had unconventional pets were exceptional children in more than one respect. Probably the problem of domestication will be solved by some of these children who are not afraid to overstep convention. At any rate a close study of these much misunderstood creatures would do wonders in converting irrational hatred into rational interest.

In addition to the 1,365 manuscripts on pets, there were 50 written about "My Visit to the Zoo". An examination of

these reports shows that the monkey was the most interesting animal to these children. They were interested in monkeys mainly because they resembled human beings. Interest in the elephant centred about his size and the use of the trunk. The bears, lions, tigers, seals, etc., were merely mentioned incidentally. The children were intensely interested only in those animals that were doing something.

These school compositions give a somewhat one-sided picture of the treatment the pet receives in the hands of the child. It is known positively that children often maltreat, injure, and sometimes kill their pets. Various statements suggest this sort of treatment, but they omit the recital of any details. Yet there is little doubt that the barbarity children display toward animals may be reduced and often destroyed by giving them a pet to care for. In other words, a pet is a palladium against excessive brutality to animals.

Some children never have any pets except imaginary ones. Even children who have toy animals or real animal pets frequently create others in their imagination.

Popularity of a pet often turns on a trivial consideration. Large districts are sometimes swept by a wave of popularity in favor of a certain animal. Pet crazes may be a disturbing factor in a census of the pets of any one locality.

The cost and novelty of a pet are determining elements in the choice. The cost of a parrot will probably prevent it becoming very common. Nevertheless, for some children, the new, strange, uncommon animal has already a good start to becoming the favorite.

Some animals are naturally antagonistic. The fact that animosity does exist sometimes prevents children from becoming acquainted with one or the other of these species, and may cause bitterness toward any animal that is inimical to the pet they then possess.

A few compositions show that pets do not appeal to some children. But their number is very small and they are certainly to be considered abnormal. At least they are not the norm.

Conclusions. I. The acquisition of dominion over animals was of fundamental importance in the development of the race. If the child is to epitomize the race's experiences, the pet becomes the cardinal factor at a certain stage in the child's development. There can be little doubt that the practically complete separation of most city children from the ancient helpers and companions of men leads to the loss of an element of culture that is most serious and permanent. To deprive a child of association with animals is to deprive him of his phyletic

inheritance. A wide acquaintanceship with animal pets ought to be considered an important part of a liberal education.

II. Chance contact with animals will not suffice. If the contact is to be educative there must be more than mere incidental association. Complete ownership will count for more than chance association and will besides develop a keener sense of responsibility.

III. That pets may be an important means of education is obvious. Beginning with a pet such as the rabbit that gives little trouble and has little that is unexpected in its daily behavior and passing on to an animal that more closely approaches the human type, such as the horse or dog. They should first have pets which give them agreeable sense impressions and satisfy the outpourings of their own impulses of care and affection. Later, those pets that will, to a degree, reciprocate their affections, and those having more marked physical and mental characteristics.

IV. The child's anthropomorphic way of looking out on the world leads him instinctively to ascribe emotion, sense, intelligence, and morality to animals.

V. Animals are an intervening stage between the child and man, and the child should receive all the training possible from this stage. In short, he should be brought into sympathetic rapport with the animal world.

VI. From most pets a boy or girl can get some experience of the economic relations of man to animals.

VII. Association with animals will encourage the social instincts and tend toward the repression of the unsocial.

VIII. Pets afford children an avenue for the vent of their affections and certainly stimulate the growth of sympathy.

IX. Lastly, all children seem to be more deeply interested in what the pet can do than in any other section of the study; in fact, in so far as could be ascertained, almost as much as in all other sub-divisions combined. This on the one hand emphasizes the advantage of the active over the passive method in teaching Nature Study, and on the other hand the necessity of placing greater emphasis on the dynamic aspect of every subject.

The writer is indebted to the following persons for collection and forwarding of data. Dr. Margaret K. Smith, State Normal School, New Paltz, N. Y.; Miss Harriet A. Marsh, Detroit, Mich.; Dr. Frederick F. Tracy, Toronto, Canada; Dr. Herman T. Lukens, State Normal School, California, Penn.; Dr. W. G. Chambers, State Normal School, Moorhead, Minn.; Superintendents, C. S. Lyman, Amesbury, Mass.; S. J. Roller, Niles, Ohio; L. E. McGinnes, Steelton, Pa.; J. W. Cannon, New Castle, Pa.; Prof. W. S. Monroe, Westfield, Mass.; Dr.

E. F. Büchner, University of Alabama; Miss Lillie A. Williams, State Normal School, Trenton N. J.

It is with appreciation and gratitude that the writer acknowledges his indebtedness to Pres. G. Stanley Hall for invaluable suggestions, criticism, and encouragement during the preparation of this article. To Dr. Theodate L. Smith he is also indebted for many scholarly suggestions.

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A CONTRIBUTION TO THE DATA OF DREAM PSYCHOLOGY

By Augusta Wiggam

The returns of a questionnaire on dreams have been carefully investigated by the author with the purpose of finding which way the dream needle points. This questionnaire requested accounts of remarkable dreams—and from adults some introspection in regard to dreams in general. Replies were received from persons between the ages of six and thirty-five. Unfortunately reports from adults were largely those of women—whether because collected at a normal school where women considerably outnumber men or because men do not take dreams with sufficient seriousness to reply is uncertain.

These returns have been classified under the following heads: *Causes ascribed; Effects attributed; Sensational content*, that is to say whatever sense stimulation was given rise to, in the dream; *Subject Matter*, which includes the general set of events lived through in dreams; *Repetition; Coming true; Times when most frequent; Problem solved; Confusion with Real Life;* and *Somnambulism*. There were also Day Dreams, Their Subject Matter; Tendency toward them; and Their Effects.

Very few of the replies could be classified under more than one or two of these heads; many gave simply one dream; many gave no particular dream at all, merely opinions on the general subject.

There were two hundred and twenty-two returns on Subject Matter, one hundred and sixty from females and sixty-two from males.

Of these correspondents twenty-nine specifically record that they dream over the events of their daily life, but slightly changed. This number has no special significance, however, because a great many others indicate that they sometimes dream in this manner as well as along other lines. These daily events occasionally include the scenery and natural surroundings of the dreamer; his fancy goes afield over hills and dales and to the ocean. It may here be remarked that these returns came mostly from the Pacific coast.

Apparently a large factor in dream life is the thing from which we have tried to escape during our waking life, whether it be trivial or of great import; a snake or our own moral

degeneracy. Freud aptly terms these ideas "evicted". The thing one has willed out of the foreground of consciousness is the first to present itself when he has ceased actively to submerge it. Among these dreams was a large number of admirable instances of this tendency. Thirty-one *state* dreaming of things they abhor and have put out of mind during the day.

A woman thirty-two is afraid of driving horses. During a winter when it was necessary for her to drive one constantly she continuously dreamed of frightful runaways. A girl twenty-one told a very insignificant lie to her father and resolutely put it out of her mind, but she often dreams of it. A girl thirteen is afraid of ghosts and though she can be talked out of her fear in the daytime, dreams of bodiless heads surrounding her and the grasp of unseen hands. A little boy often dreads having the nightmare and dreams another person is having one and he is trying to stop him. A girl of twenty-two represses an intense grief while she is awake, but dreams of it constantly. A girl twenty witnessed a suicide and in spite of her efforts to forget it dreams it over and over. Little girls have a great way of dreaming of witches and gypsies, "Land of Devils", polar bears, black objects, unknown "things" which pursue them, kidnapping women, chasing cows, and of being lost.

In general, however, adults seem to be much more troubled by ideas which, though robbed of waking attention, claim the foreground of dreams. The general type of dream is well illustrated by this instance: "When I was a small girl several of us children had been eating green apples off one of father's choice trees. I told the children to be careful and not hurt the tree or leave any traces of our escapade. That night in my sleep I repeated exactly what I had said in the afternoon and my father heard me. I remember of dreaming about all the afternoon's occurrence."

Again the dream web is woven of fulfilled desires; the longing heart finds here a ready heaven of realized ideals. Little children enjoy another Christmas, they go to parties, visit fairylands, castles and courts, toyland and the "zoo"; the adventures of Alice in Wonderland and those of Robin Hood become the personal possessions and experiences of little dreamers. A little girl drops down into the ocean and finds herself the princess of a coral palace where beautiful fishes are her friends and servants. "Pink and white mist-ghosts" come and carry a little boy to a pink and white fairy court. There the king and queen question him kindly—he is only able to reply "I don't know." Finally he is thrown into a dungeon for his persistence in this answer—perhaps to the edification of a teacher who has scolded him for it. Another boy's ambitions

are realized by receiving a commission from the government to arrest certain smugglers on the Canadian border and by succeeding admirably. A boy of eleven takes a moon-bound balloon. The balloon, however, begins to leak at the outset and is caught upon a high steeple. There arrives a fairy rescue party in another bearing the passengers safely home. A fourteen-year-old girl set out on a similar excursion, but her balloon not only reached the moon but went through a hole in it encountering wierd little dwarfs along the way. A boy of twelve paints a house, "all by himself." Another who becomes a millionaire is in a dilemma between the purchase of a locomotive and an electric car. Another millionaire buys a flying machine from which he scatters five-dollar gold pieces to newsboys, finally taking the latter in with him on a continental tour. They sail over glaciers in Russia, and when they alight in China are greeted as gods owing to their aerial passage. A boy of fifteen gives a detailed account of the manœuvers he orders in a battle. Another catches a cannon ball in his own hands thus saving the army. A boy only nine was in England fighting for King Harold. He was a Saxon and owned a beautiful black horse. A girl goes to the woods, puts her lunch in a nutshell, and encounters a bird with a pink and white top-knot who laughs and talks with her. A little girl afraid to swim, does so easily in her dreams. A boy fifteen takes his "lady friend" for a moonlight boat ride on the lake. A party of little girls is sent for with a coach drawn by ten white horses harnessed in holly, to take them to fairyland. A girl nine goes to live with the Esquimaux. One of fourteen dreams that President Roosevelt "takes a fancy to her" and takes her home with him. Another becomes a second Sella. A boy while fishing hauls in a great fish filled with treasure—jewels, gold and so forth. A boy of nine is run over by a motor car, but is uninjured. When the driver jumps out to pick him up, the boy leaps into the car and escapes with it, gets his mother, and they have a gay time. A girl who cannot get her mother to share the joys of coasting with her, seduces the latter to the top of a steep hill, puts her on a sled and pushes her down.

It is noteworthy in this connection that many little children of the summer-the-year-round-land dream of snow and sleighing and the joys of a frozen winter. Very often, too, they dream of friends and other associations "back East." Also lost and dead pets are restored to their owners and playmates who have been separated find themselves together at the touch of some magic, and wisely discriminating button. A great many longed-for journeys are taken. Boys are likely to visit cannibals and to embark in men-of-war or airships. If they

descend to railroads at all they run them themselves. Girls are more fascinated by the social features of travel. One skates around the world on obliging frozen canals. She finds that people rise too early in the morning in Germany and that they are too clean in Holland—it is possible she was haunted by visions of the wrapper of "Old Dutch Cleanser." A little boy of eight exploring with his dream-stick in hand comes upon a forest of Christmas trees beneath each of which there is a soda fountain. Sweeter, simpler tastes cause one of the same age to take his sister in a pony-cart to the woods, where they watch the birds and flowers.

Grown-ups are either less fortunate in realizing their desires through dream-dispensation or are more reluctant to disclose them. From personal observation the author would venture the opinion that more primitive peoples—negroes, for instance, and the ignorant and uneducated of other races are luckier in the illusion-lottery than—say the average bachelor of arts. The etymology of the word dream points toward this conclusion. The original Anglo-Saxon root signified "harmony, a joyful sound, joy, and music."

Running beneath many of these dreams of hopes come true, one may trace the undercurrent of emotional life—the inner life of the secret soul, which even the dreamer scarcely acknowledges in waking consciousness. This is much more apparent during adolescence, though here the author is guilty of divination of dreams in the first degree; for this undercurrent is largely apparent through what the recorder unconsciously tells of himself and his environment. In the instances in which a direct reply is given to the question: "Do dreams tend to repeat the undercurrent of emotional life?" it is highly doubtful whether the questioned and the questioner had anything like similar conceptions of the expression. A few of these answers, however, seemed trustworthy. One such from a woman twenty-one stated that as a child and as an adult her dreams had simply rehearsed her day's experience, but that during adolesence they followed the undercurrent of her emotional life. The little general of fifteen, the gay dispenser of gold pieces, the boy who was just beginning to dream of his lady friend, were all disclosing their fundamental racial emotions. During the adolescent period these seem to be largely connected with religion and love—earlier it is self-assertion and healthy egotism; later it is again ambition. A boy of fourteen dreams he is falling in love, just as he is wakened by his sister. He asserts he would have given five dollars for one minute more of that dream. Little girls from twelve to fifteen dream of a prince who loves them when once he has beheld them. Then the prince, like Lochinvar, rides away with his

prize. Children who have long had the care of smaller ones dream of accidents happening to the little ones. In some cases they keep covering any one with whom they sleep from the habit acquired of covering babies. A homesick girl dreams she is alone in a desert. A girl nineteen transposes Orpheus and Eurydice and loses her lover in hell. There are no records at all of men dreaming of the judgment day, but it is a very popular subject with women from twelve to twenty-two or three. This type of dream once in a while produces a rare mixture of daily life with the supernatural.

Sometimes the religious dream swings wide the mark of racial emotion and betrays the dominating and individual passion. Such dreams come under a class I have named Strong Emotional Life, that is, characteristic of the individual as such and not of his time of life nor his surroundings. One girl of eighteen who is evidently much concerned at the refusal of a sister to affiliate herself with a church organization, dreams an angel comes and takes away a third sister while the devil claims the other who "is not a Christian." A girl who in an account of day-dreams says she wants to be a great naturalist had a dream in which a spider that she was putting into a poison bottle seemed to be the symbol of a highly-prized friendship which she was thus stifling. She adds that she had lately offended the friend concerned. In a large majority of the dreams given as "coming true," the dominating emotion is portrayed. Persons whose relatives or friends are seriously ill anticipate death in their dreams. This is also the case with a woman twenty-seven who dreams of a new method of dealing with a refractory pupil and tries the dream suggestion with success. This is probably true, also, in the instances of problems solved. A girl eighteen who is confronted with a moral problem solves it in a dream. Another, twenty-one, very frequently solves arithmetical problems orally while she is sleeping. A girl nineteen who had worked on an original problem in geometry for two weeks found a solution in a dream which she recalled on awakening. A girl eighteen, having worked for hours on a geometrical problem, solved it in her sleep — in her own words the dream "stayed with her" until she was able to record it. To the observer the experience bears a slight similitude to the post-hypnotic suggestion. In addition to these instances there were two others of problem solution.

A considerable factor in the subject matter of dreams is the *Futile Effort*—every endeavor to accomplish one's aims is baffled and the will almost paralyzed. These dreams are often as full of adventure as the traditional dime novel — just as the subject is about to reach his goal it is snatched from him and he is snarled again in the meshes of some impenetrable net. A

girl starts out to take a certain train, but goes to a grocery to buy her ticket; she is much annoyed at the grocer's refusal to sell it; finally, however, gets one just as her train pulls out. A pillow becomes animated and the owner finds no way of controlling its movements. Friends are seen in imminent danger yet one cannot move a little finger to save them.

Next in importance to the Subject Matter of dreams is their Sensational Content. Records are given by 178 persons—128 females and 50 males. Dreamers ordinarily hear and see just as in waking life. Touch sensations appear not to be so common to the sleeping organism as at other times. Taste and smell are very seldom stimulated. Kinæsthetic and organic sensations, however, most frequently command the dream attention.

The dream of falling recurs again and again, also those of the same class—floating, flying, sinking, and drowning. The sensations I have described under the term Futile Effort may also be classified as kinæsthetic. The impotency against which we so often struggle in dreams takes a great many forms. Many times the subject is being pursued and his flight is hindered by stumbling, by getting his feet entangled, by falling back when climbing, becoming paralyzed, feet growing leaden, hands getting so heavy they cannot be moved, losing one's clothes while attempting to dress, inability to find anything sought; all motor expression seems utterly lost. A girl of fifteen who sees pictures on the wall mimicking her and making faces tries in vain to close her eyes so as to avoid seeing them. A girl who is trying to jump from a cliff though she repeatedly makes the effort, floats back to her starting point each time and simply cannot "dash herself on the rocks below." A boy trying to carry home several articles continually drops one of them — is incapable of holding them all at the same time. In this case, as in very many others, fatigue appears as the senses are stimulated. Weariness is frequently recorded as pervading all the dream experiences.

The organic sensations which occur most often are smothering and strangling. Then appear suffocation, choking, and hunger and thirst. Nausea is frequent.

Instances of cutaneous sensations are numerous. Pressure is most common. A boy fourteen feels two large lions who rush upon him. A lobster bites a ten-year-old's toe. A girl nineteen delights in handling a snake. A "strong arm" or an "unseen hand" is felt restraining people from accomplishing their purposes. A girl who imagines her brother is dying feels him in her arms. Many persons grow unendurably cold in their dreams. Sensations of heat are felt by persons dreaming themselves in a burning building or a desert. Bodily pain

is often felt—one girl lost in a desert tired, hot, and thirsty, and in great pain, longs for animal sympathy, the mere thought of human beings having become repulsive to her. One record is given of a young woman who when she herself is not well, in dreaming transfers the self-same pains to other persons, for whom she is greatly distressed.

Very many of the children's dreams recorded feasts where best-liked and coveted foods were eaten though no specific mention is made of taste. A child of eight enjoying the sight and smell of candy has it snatched away just as she is *about* to taste it. A grown man dreams of eating and enjoying the taste of especially well-liked foods. Smell is occasionally mentioned. Some of the children who dream of their homes "back East" enjoy again particular out-door fragrances. A boy of twelve dreams of a volcanic eruption and smells the smoke and hot lava coming. In nearly all dreams of fire the odor of burning wood or of smoke is present.

Hallucinations within the dream should perhaps be considered in connection with vision. Metamorphosis of the objects about one is the most common phenomenon. In most cases the subject while in perfectly pleasant and safe surroundings finds them imperceptibly changing until finally he is in a most precarious position and suffering keenly. Also objects magnify under the subject's attention; ordinary articles begin growing larger until he is left a dwarf in their midst.

The dreams of the blind offer some very interesting sense data. The results obtained by Jastrow[1] show that persons born blind dream in terms of the sense perceptions which they have. Those who have become blind dream of their earlier sight experiences. Deaf mutes talk on their fingers in their sleep.

Turning now to the matter of the repetition of dreams, there are reports from thirty-eight persons. But two of these came from men. They were also the only ones who stated that their dreams were repeated periodically—they gave no information as to the nature of the dream nor the supposed cause of the regular recurrence.

Instances are given in which similar daytime experiences were followed by the same dream. Quite a number have the same dream several nights in succession. Two of these were young girls, who, during this period, were in a constant state of daytime fright and worry. One, during the absence of her father, dreamed each night of the same robbers. Two women tell of repeating a whole dream-repertoire. One might sup-

[1]Fact and Fable in Psychology, Joseph Jastrow. Boston and New York, Houghton, Mifflin Co., 1900.

pose they could fairly well predict what dream would be "on" for the night. One girl says if a dream is particularly nice she always has it over again for several nights but that the bad ones never return. Two record dreams which are being continued serially. One of them a young woman, twenty-four, had the first part at twelve, the next at sixteen, another at eighteen, and is eagerly looking forward to another chapter. A woman thirty-four records that during the early twenties she frequently had the same dream of the end of the world. A girl twenty had the same dream very often between the ages of twelve and fourteen and several years later had it again four times in two weeks. A girl nineteen, one year after her father's death begins to dream it over again. Some persons are conscious within the dream of having had it before and think "Here is that same old dream to be gone through with again."

Closely related to repetition is somnambulism. Forty-seven cases were reported—thirty-eight females, nine males. Some of these only talk, sing, laugh or weep, while others rise from bed and repeat daily activities; still others go to great extremes of conduct. A boy of eighteen says he adopts "a character of anger" in his sleep. A girl of the same age walks banisters and once attempted to throw her little brother out the window. A woman twenty-three says she was awakened once as she was just about to set fire to the house, and remarks incidentally that she did not walk again for a much longer interval. A grown man fights and chases the marauders of his dreams. A boy of twelve repeatedly shoots the electric light. A growing boy was cured of walking in his sleep by an irate mother who tied him in bed every night for a week. Among the cases of repetition of daily activity is that of a girl who rides every day and at night substitutes bed clothes for her horse. A college boy leaps over the footboard of his bed every night as in taking hurdles on the athletic field. A girl twenty takes in turn the opposite sides of a debate in her sleep. A girl fifteen, who is studying German, talks that language in her sleep. A women twenty-nine performed some duty in her sleep which she had feared forgetting. A college girl recites her work assigned for the next day. She also recites whole poems which she has studied but could not repeat in a waking state. Some of these subjects will carry on a rational conversation with any one who starts talking to them. Others will answer questions, disclose secrets, etc.

One whole family is reported as somnambulistic and there are two in which three sisters are all sleep-walkers. Another family has two sisters and a brother of this tendency.

The causes and effects which these returns ascribe to dreams

are in almost all cases those popularly given. Late hours and late meals get the burden of responsibility, then weariness, illness, and excitement. A number report that dwelling on and repeating dreams causes them to increase. Sleeping on the back rather than the side is said by several to induce dreams. A strong impression, a sensational story, or one of the "hair raising" variety, a rebuke, homesickness and worry are all anathematized as the creators of dream tortures. Some persons do not recall ever having dreamed except under the influence of narcotics or anæsthetics, and some only during convalescence. In most cases bad dreams are reported to be caused by adverse daily experiences and good dreams by pleasant ones. There is one example, however, to the contrary. A girl nineteen says when she is tired and restless her dreams are good and that when she is perfectly well and care-free they are bad. A girl twenty-one says that the subjects of her dream are those of her *earnest* thought before going to bed. A girl twenty never has nightmare at night, but is sure to if she sleeps in the daytime. A grown man blames a troubled conscience for his nighttime miseries. A woman suggests Christian Science by saying that dreams may be decreased if not entirely done away with by self-control before going to sleep. Finally a girl twenty refers her bad dreams to going to bed early.

Closely allied to causes are the times at which dreams are reported to be most frequent. There are but fifteen replies to this question, only one from a man who thinks his childhood to have been the most dream-productive period of his life. The years from sixteen to eighteen, twelve to eighteen, fifteen to eighteen are represented as greater in dream fertility. A grown woman significantly says "I dreamed most from fourteen to fifteen when I had more silly and romantic ideas in my head than at any other period." A girl eighteen dreams only during daytime sleep. A woman twenty-nine dreams most often in midsummer and in midwinter. Another is inclined to dream more on warm summer nights than cold wintry ones. A girl nineteen dreams more on free-from-school nights and just on going to sleep or wakening. Another school girl reports more just before waking, more in summer than winter and on Saturday morning. The frequency of dreams during illness and convalescence and when exhausted has been noted under causes.

Effects of dreams are mostly recorded by those who believe in dreams, so to speak, or by those who are peculiarly susceptible to moods or strong impressions. Pleasant dreams, however, are reported to leave generally pleasant effects. Replies were given by fifty women, thirteen men.

Those who accept dream prophecies are much distressed for days lest the evil omen be a true one. Others have dreams similar in effect to "The Vision of Sir Launfal". Their vagrant fancies apparently furnish material for moral regeneration. One girl nineteen dreamed when she was only seven on the night of her mother's death that the mother came as an angel and helped her over all the rough places in life, and she says that she is given a great deal of courage through the constant recall of the dream.

The object of a dream terror sometimes becomes the subject of daytime fright. A girl twenty-three had, when she was six, a horrible dream of a drunken colored man, and is still very much frightened at the sight of either a drunkard or a black man. Another had a dream in which she was leaning from a third-story window watching a circus parade. A giraffe stopped in front of her and began to stretch his neck which was of limitless elasticity until finally his head was on a level with her and he was about to bite her. Ever since then she has had a fear and dread of people who have long, thin necks. Very many are definitely depressed by bad dreams and greatly exhilarated by good ones. A number of physical effects are mentioned. A girl twenty-two is tired after dreaming because she always has some hard task to perform. Physical exhaustion frequently follows nightmare. One person awakes in a perspiration and is tired and listless on the day following a night of frequent or of emotional dreams. Another feels that she has lost sleep when she dreams very much. One reports that waking from a dream prevents further sleep. One wakens from dreams limp and out of breath. A boy fourteen is worn out next day from physical exertion in dreams. Another, twelve, has a headache and is sick all day after a nightmare.

Some poor overworked dreams have not completed their duties by merely appearing, but must needs "come true". Instances were given by thirty-four women and six men.

The most frequently fulfilled dream is that of the death of some person who is seriously ill. This dream usually occurs at the approximate time of its subject's death. Several report that the opposites of their dreams occur. The unexpected return of members of the family who are away is often dreamed of and occurs. Also, wished-for things are dreamed of as possessions and are later received as gifts. One girl dreams that letters she expects come. They arrive safely in spite of the dream. Objects *déjà vu* appear here. People dream of places new to them and later see them. One girl accurately described the sister of a friend to her before having seen the sister who does not in the least resemble the friend—this is all done by the crystal vision of a dream. Several people state

that their dreams often come true without giving specific instances. One woman conservatively says that she does n't dream often but when she *does* her dreams come true. She gives two cases—one of the death of a friend, the other of loss of poultry taken by an eagle. A girl nineteen dreams her "chum" is false and is just warned in time. Dream telepathy is frequently reported. Of course the instances in which deaths are dreamed at the time they occur are such. One young woman reports that while she is sitting writing the word "petroleum" in her physics note book her sleeping sister says "coal oil". Also a mother and daughter dream essentially the same dream on the same night. "Parts of dreams" are said to come true. One girl says she does not think that entire dreams are ever realized but she has noticed that something related to her dreams always happens next day. A boy twelve appears to think it remarkable that after his dreaming in the spring that chickens were stolen, that thing actually occurred the day before Thanksgiving. One woman dreams that burglars are in the house and wakens to find them there.

A number of cases of confusion of dream life with actual are reported—mostly of children but some of grown persons. A mother says that her boy of five often asks her what they two dreamed together last night being convinced his mother was there. A girl twenty-two finds it hard to be nice to friends who have mistreated her in a dream. Several report having to be re-orientated after a vivid dream.

In this study such day-dreams are interesting as are somnolescent. The subject matter of these—there were twenty-five reports—is found to be similar to that of the dreams of deeper sleep. They are considered by some to be helpful and recreative, by others wrong, since they tend to make one absent-minded. One woman states that she does not waste valuable time that way. Two report that their day-dreams are becoming involuntary after long voluntary cultivation.

The study of these data has panned a little ore of fact as well as brought out many suggestions. The content of dream-consciousness has been found in the dreams examined to be imagery of the casual events of daily life, evicted ideas, that is, those banished from attention, desires, which never usurp waking consciousness, racial emotional life, of which the individual is no more conscious than of the process of breathing, and certain phases of strong, individual emotional life. Here racial emotion repressed by conventions strange to it, may vent itself. Here, too, the restrained feeling of the individual's crisis is expressed. In dreams the life of feeling, robbed of its theatre by tyrannical convention, claims its rôle.

The sensational content of dreams is largely visual and

auditory, owing to the fact that these senses supply the chief matter of ideation. Kinæsthetic sensations have much greater prominence in dreams than in waking life. Organic sensations almost never conscious in the waking states of health assume here a larger importance.

The data of Repetition appear to show that a dream complex given the stamp of a particular causal emotion, that is to say, the emotion of the day which produced the dream, tends to reappear upon the return of the emotion. Somnambulism with its greater emotional association is most frequently repeated. And, finally, the data upon the frequency of dreams shows that the greatest dream-activity occurs during periods of high emotional life.

ACTIVITIES OF CHILDREN AMONG PRIMITIVE PEOPLES. I.

By Alexander F. Chamberlain.

In the numerous anthropological and ethnological monographs of undoubted accuracy and scientific value that are being published from year to year in all parts of the civilized world there is contained much material of great interest to the student of childhood in all its aspects. The present writer offers here the first of a series of articles dealing with the activities of children among primitive peoples as recorded in recent anthropological investigations. The people here concerned are certain Papuan tribes of Dutch New Guinea as described by Dr. G. A. J. Van der Sande in his *Nova Guinea*, *Vol. III*, *Ethnography and Anthropology* (Leyden, 1907, pp. 390, with 50 plates, 216 text-figures and a map), embodying the results of the Wichmann Dutch Scientific Expedition to New Guinea, in 1903. The excellent illustrations in this work are a welcome addition to the adequate descriptive matter. Ordinary, common-place activities common to all children are not considered in detail.

1. *Betel-chewing*. Although betel-chewing is in some parts of New Guinea tabooed to children, sometimes to young men ("as long as they remain in the temple"), and even occasionally to young men "until they have killed somebody" (p. 20), the quid of siri, like the tobacco-pipe, is often passed around from mouth to mouth,— "a used quid of a grown-up person is chewed afterwards by the children with evident pleasure." Van der Sande himself witnessed the following at a dance at Tobádi, participated in by boys and girls as well as adults (p. 10): An old man who passed this group handed his used quid to a little girl, apparently no more than five years old, who immediately took hold of the present with joyful eyes, but was all at once forced by the other girls to divide the quid, after which all rejoined the dance, chewing and laughing with evident satisfaction. See No. 15.

2. *Carrying*. In New Guinea the heavy loads from the gardens are carried home by women and girls (p. 178). Generally cord bags are used for this purpose; in the western regions baskets made of *pandanus*-leaf, *hibiscus*-bark, or reeds. The "women's bags", as they are called, are always larger

and deeper than those of the men (p. 180). Women and girls carry their heavy bags on their backs with a forehead strap or sling. Their bags are also used by them for carrying favorite dogs. They load the bags upon their backs in a crouched position. See No. 7.

3. *Dancing.* Some dances (*e. g.* the *Iba jondige*) are executed by men, boys and girls (p. 310). At Tobádi this dance was performed "by a crowd of almost 50-60 persons, consisting of a number of men, behind which was a group of boys, and again behind these a group of girls, all standing in on a corner of the platform" (p. 311). The people of Mapar have numerous dances inside their houses, in which "men, women and children are placed in separate rows, but dance all at the same time" (p. 311). See No. 13.

4. *Driving boars in hunt.* In the *battues* of wild pigs of the people of Tobádi the line of drivers placed at the bottom of the wooded slope is composed of boys (p. 155). See No. 5.

5. *Education of youths in "temple".* In the so-called "temples" are to be found at all times "a number of youths, novices, who also sleep there and who, during a longer or shorter period after the years of puberty, are not allowed to have any connection with the parental home. They may not even be seen closely by any female being" (p. 293). At Tobádi such youths are "locked up" in the "temple" sometimes for more than a year and "during this time the young men under the special superintendence of *Hamadi* (the village chief) do all sorts of work, manufacture string, nets, carve and paint ornaments and also participate in hunting and fishing" (p. 294). There are also religious ceremonies, initiative rites, etc. See No. 12.

6. *Fishing.* The catching of the large fish known as *kā joi* is usually carried on by the women, but "in the right season the fish seem to be so abundant that the women cannot manage the fishery without aid: men and children come to their assistance" (p. 167). The illustration on page 169 (fig. 109) of "fishing with the fishing basket" at Geelvink Bay shows "two girls standing by, one of them carrying a bundle of small fish," while "the boy standing next to them has a fishing arrow, which he has evidently used as a throwing spear" (p. 168). See No. 5.

7. *Gardening.* In garden operations the girls take part with the women, whose work begins after the men have cleared the ground (pp. 176-177). They are also employed with the women to "carry the heavy loads home from the gardens" in boats and by means of large or small baskets (p. 178). See No. 2.

8. *Grinding and polishing stone implements.* Part of this

process seems to be confided to boys. After the stone hatchets (*sè* or *tsè*) have been given their form of flaking, the grinding and polishing are sometimes "done by a boy on a big, flat grinding stone, *sèdère*, without sand, but with plenty of water, whilst now and then he plunged the hatchet into the lake in order to wash off the shavings, the 'tooth,' and to ascertain the result" (p. 175).

9. *Lime-making.* One of the illustrations in Van der Sande shows a boy of the L. Sentani tribe in charge of the burning of fresh-water shells for the purpose of making lime (p. 22).

10. *Navigation.* Of the *isja* or men's boat, Dr. Van der Sande says (p. 196): "The *isja* is in the fullest sense of the word a men's boat. I never saw a woman making use of it; on the other hand, boys from 10-12 years old manage it with the greatest confidence. The possession at this time of life of a somewhat smaller *isja* depends, no doubt, upon the early age at which boys are here admitted into the men's watch-houses." At Asé he saw "children 4-5 years old struggling in fairly deep water on small immersed models of the '*isja*' specially intended for such exercise." See No. 11.

11. *Plays and games.* Children are generally left quite to themselves. Indeed, Dr. Van der Sande says (p. 265): "Never did I see a father or a mother playing with the children." Among the sports of the boys are shooting with the bow-and-arrow, playing with hand-tops, jumping and tumbling about in the heavy surf rollers, playing in the water with models of the men's boats, etc. These last two sports are carried on by girls as well. See No. 10.

12. *Preparing twine for nets.* At page 164 is described the preparing of twine from the *ime*-fibers by the Tobádi temple boys. Occasionally they do a little netting also, but, while the preparation of the twine is men's work, the making of fish-nets belongs to women. See No. 5.

13. *Scarring by fire.* In various parts of New Guinea boys and girls raise scars on their flesh by burning, both as a test of courage and for mere amusement. On the island of Jăpen "the girls at dances give the young men such wounds with burning wood" (p. 50), and in the Gilbert archipelago Finsch saw "young girls causing such scars on themselves with a red-hot shell, 'out of fun'."

14. *Shooting.* In many parts of New Guinea the right to carry a bow and arrow is permitted to young men only after certain ceremonies have been gone through (p. 248), as *e. g.*, when he has been received as a warrior. At Humboldt Bay, "after leaving the temple"; at Tumleo, "after the ceremony of putting on the stiff bark girdle." At Tobádi a special sort

of arrow is used by children; also by adults for shooting mice (p. 263). Shooting is also a sport. See No. 11.

15. *Tobacco using.* In some parts of New Guinea young children are never seen with tobacco or pipes, though their use by them is common in others. In the region of L. Sentani, boys smoke "as soon as they serve in the watch houses" (p. 18), while in Humboldt Bay "smoking by young men in the temple is not allowed." At L. Santani young children do not smoke cigarettes or use pipes. On Murray Island, where the tobacco tubes are passed round from mouth to mouth, "very young children are there allowed to smoke" (p. 19). The Aroani children are also indulged in their manner of using tobacco at an early age. See No. 1.

SOME PHASES OF THE PLAY OF JAPANESE BOYS AND MEN

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Japan has been called the paradise of children, and no one who has ever walked along its streets and noticed the numerous well-filled toy shops or the consideration with which every one treats the little ones as they play fearlessly about the streets will ever dispute the statement. And from this it may be easily inferred that it will be impossible to treat in any detailed manner such a subject as the play of these people. A further limitation upon the depth of the discussion is the fact that the writer spent but six years in the country, and six years is a very short time for an Occidental to get any really deep insight into the life of Orientals. But it may nevertheless be interesting to those who have not had even this slight opportunity for observation to hear of some of the differences between the play of Japanese and that of American boys and men.

I. Fighting Play

In common with American and all other boys, the small Japanese is fond of tussling when very young, say from two to five or six years of age. He differs from his western cousin, however, in leaving off this kind of play rather earlier. This is due to a kind of dignity which he begins to assume at even as early an age as five or six. This dignity, in turn, is probably due to the more dignified behavior of the father of the family in his relations with his children. He sees much of them, especially of the boys, but seldom or never indulges in a real romp with them. Although this sense of dignity is not very well developed at the age of six, when the boy enters school, yet it must be admitted that the small Japanese has more self-control and less of the rowdy in him than the average American boy at the same period. Of course he sometimes has altercations with his schoolmates, for he is still human, but such encounters are more rare than in this country and usually take the form of a scuffle rather than that of a "stand-up-and-knock-down" fight of the Tom Brown kind. The Japanese boy seldom or never uses his fists, scratching, pushing, slapping, etc., being the usual modes of combat.

In the less personal or longer range fighting such as throw-

ing stones, clods of earth, or other missiles, also, the Japanese boy is a little behind the American. He does, however, enjoy a good snow-ball fight when opportunity offers. Instead of this kind of fights in which one set of boys fights against another set with missiles, the Japanese boy has a number of kinds of combat modelled more closely along military lines than those of the American boy. He includes all of these under the general name of "Gem-Pei War" after one of the greatest and most bloody of the civil wars of Japan. In this war one side fought under a red flag and the other under a white one, so to-day we find these two colors used to distinguish two sets of opponents who meet either en masse or two by two, according to the kind of combat. One might write a book on the various ways in which these boys play mimic war, but a description of one way will be sufficient to give some idea of the general nature of this kind of fighting play.

In a small town or village there are sure to be two or three groups or "gangs" of boys. When two of these groups wish to try their strength on each other, or when one group divides for the purpose of a struggle, the two sets of opponents each choose a leader and they then repair to the tops of a couple of hillocks in the outskirts of the town which are to be their forts. These hillocks must be within sight of each other, and on one of them one party puts up a white flag and on the other the other party puts up a red one. When all is ready the signal to begin is waved or shouted by one side and answered by the other. The captains then send out their attacking parties, leaving a squad for defense around the flag. These attacking parties sometimes meet in the valley between the hillocks and if so a battle occurs there. In such a case the object of each side is to seize the members of the other party, take off their girdles (made of cloth and from four to six or eight feet long) and bind their hands and feet with them so that they cannot move. They are then laid in the grass by the side of the road completely helpless. If one side can obtain a decide advantage in this way in the fight in the valley, they may go on to attack the citadel of the enemy with little fear that their own flag may be torn down in the meantime. If the attacking parties do not meet in the valley, then it is simply a case of seeing which of them can pull down the flag of the other side first. When one or the other has accomplished this, they shout triumphantly and the fight ceases not only on that hillock, but on the other also. If any prisoners have been left bound, they are now released and the battle is over.

More highly organized forms of this kind of fighting play are to be seen among the field day sports of primary and intermediate or even secondary schools. One of them is simply a contest

of "boxing hats" on a large scale. Another is intended to be an imitation of a cavalry battle. But they all have the same military spirit and form as the one described. The contestants fight under leaders in large groups of a dozen or more, and are held in check more or less by a kind of discipline which, though not exactly military in its strictness, often organizes them into files and platoons.

The reason for the martial character of this form of fighting play is twofold. The first part of it is the fact that there is hardly a Japanese family of the middle class that has not some great military ancestor or ancestors of whom it is very proud. Stories of these men are told to the child as soon as he can understand anything and he is urged to be like them. Ancestor worship, or rather what remains of it, is called in to supplement this, and just as any boy would do under the same circumstances, the child wishes to imitate these great men. He has a wooden or toy sword as soon as he can walk and plays soldier with two or three companions or even alone, and not only is not hindered or laughed at in this by his elders, but is encouraged in it in every way possible by his parents, and older brothers and sisters if he has any. Thus he grows up with a much greater inclination toward this kind of play than his American cousin. The second part of the reason is found in the fact that at present military service is compulsory in Japan and there are few cities, towns or hamlets that are not either the headquarters of some garrison or at least visited more or less frequently by the soldiers on their long marches and protracted maneuvres. So the imitative instinct comes in here to aid the inclination noted before, helped out by all the attractiveness of the martial music, uniforms, and the other things so dear to the heart of the boy of any race.

About the age of thirteen or fourteen he takes up the more dignified and highly organized forms of combat such as base-ball, tennis, fencing, jiujitsu, and wrestling. The first two will need no explanation, as they are played in substantially the same manner as in the West.

The Japanese manner of fencing is entirely different from that practiced in western countries owing to the different kind of swords used by the Japanese knights or "Samurai" in former days. These swords were single edged, slightly curved, and wielded with both hands. Nearly all the fighting was done by sweeping, downward strokes, very little thrusting being possible with such a weapon. So now the fencing is all done with a foil made by binding small strips of bamboo into a sort of round club about four feet long, with a hilt large enough to be grasped with both hands. The object is to thrust one's opponent in the throat, or to strike him upon the arms, the

side, or the head. These parts as well as all other exposed points are heavily padded and the face is protected by a strong mask. The fencers strike with might and main, but as the foils are light the only damage is perhaps a headache if one is a novice, and as an exercise for the body as a whole it can hardly be excelled.

The sport or art of jiujitsu of which so much is made now and then is too complicated for any description here except to say that it is a mode of saving one's self by yielding at the proper moment and by gaining an advantage over an opponent by means, some, though not all, of which would be considered as foul play in any western method of fighting.

Japanese wrestling, sometimes miscalled prize-fighting, is an ordinarily harmless sort of sport consisting of a struggle between two opponents who try to push each other out of a ring composed of bags of sand, and there is no striking whatever. It is not considered to be such a high class sport as fencing and jiujitsu, however.

The manner in which these three native sports, and sometimes baseball and tennis, are conducted is rather interesting because it indicates the spirit in which these people engage in such play. At the beginning of each bout the contestants must salute each other in the most formal manner. In the case of the native sports the salute is the ordinary bow to the floor, while for tennis they stand at the outer corners of the serving courts with their racquets in their right hands and make the stiff bow so common in Japan. When the contest is over the same ceremony is gone through with again before either party retires. The reason for all this is rather a matter of traditional training. These forms were introduced when such contests were a part of the training of the samurai, a fiery set of fellows who lacked the gentler influences of gallantry toward women which did so much in the development of the softer side of the character of the European knight. So, in order to tame their wild spirits, these formalities were attached to all warlike games. They are to prevent the victor from being unduly hilarious and to enable the vanquished to retire from the field without feeling that he is entirely disgraced. No one ever feels that he must wipe out the disgrace of defeat with suicide as the Samurai were taught to do in the case of real battles, but the bitterness of defeat is great, nevertheless, and the Japanese is not a good "loser". The lack of enthusiasm, or excess of self-control, on the part of the spectators is due to the same cause, namely, the wish to make the bitterness of defeat as little felt as possible. It must not be thought from what has been said that the contests themselves are lacking in energy. On the contrary, they seem to be

entered into with a seriousness that is little short of tragic in our eyes, and are as fiercely fought as any "sport" could wish.

II. Physical Rivalry

In these matters the Japanese boy is hardly as enthusiastic as the American. There is, of course, some excitement over boat-races and what few other interscholastic or intercollegiate games there are, and in some cases there is a little training beforehand, but nothing like the long and careful preliminary practice and the wild excitement over the contest itself that we of the West associate with such struggles for supremacy. On the other hand it is certainly true that the wish to take part in the various activities of a field day is more universal than in our country. Such meets are held in all the primary and secondary schools and in the colleges three or four times a year and every pupil, student, clerk, and sometimes even the janitors take part in a contest of some sort. On such occasions the kinds of contests are as varied as the kinds of contestants and their tastes, and the meet lasts all day, from eight to four or five o'clock. The events include obstacle and relay races of every conceivable kind, ordinary races of various lengths and for every grade of contestants, trials of strength, tugs of war, hat-boxing battles, ball-throwing contests, mock battles, both cavalry and infantry, dressing contests, in which the boys strip to their underwear and then dress and run around the track, competitive drills, calisthenics, special contests for the girls such as hanging clothes up on a line, and others of such varied kinds that it would seem as though the human brain had been taxed to its utmost to invent them. The result is very satisfactory in the way of fun, but it can scarcely be thought of as an exhibition of athletic prowess as we think of it. But it must be conceded that one goes away from such a day with the feeling that if there is any person in the whole school who has not had a good time it is his or her own fault, for there are contests suited to the taste and ability of every one, even the most particular; and best of all, in these no one need feel ashamed of being beaten. Even the little lad who comes jogging across the line far behind the others has a broad smile on his face, is good-humoredly laughed at by his companions, and then enters in some other event, for he has not tired himself as perhaps some of the winners have. From one point of view, then, he has the better time for he can enter more events and still not be so tired!

This spirit seems to contrast strangely with the formality and seriousness observed before in the case of the fighting plays. The difference lies not in the fact that one is a fighting play and the other is not, but in the purpose with which the con-

testant enters the sport. If winning is really one's aim, he should work for it with might and main and would feel badly if disappointed. On the other hand, if fun is the object to be attained, too much stress on winning would embitter defeat and thus spoil the enjoyment of many. So in the case of these field days every one is urged not to take the matter too seriously lest he lose, but if the same events were, for any reason, entered into for the avowed purpose of winning, as the other bouts are, then they would be conducted with the same ceremony and fought out with the same silent intensity.

III. Mental Contests

There is nothing of special psychological interest in this phase of our subject so far as ordinary play is concerned, but there is a kind of mental contest that may perhaps not be classed as play, yet which bears very directly upon the psychological problem, which I would like to speak of, namely, the way in which Japanese children rebel against authority. This the boy begins to do as soon as he is old enough to have any will of his own at all. As he is seldom corrected or denied anything, and is usually coaxed or bribed into doing the things that he dislikes to do, he is often, at three to eight years of age, a willful, wayward, selfish, noisy little tyrant. But the strange part of it all is that by the time he is ten or twelve years old he is one of the quietest, most obedient lads in the world. They are never punished at all severely, and a scolding from a teacher will bring tears in floods from a boy of eleven or even older, while the ready obedience of the twelve and fourteen-year-old lads who enter the secondary schools is little less than marvellous.

I can explain this in only one way, and whether that is the right way or not I do not know. In the first place, the boy has before him, in his father and mother, types of self-controlled persons, and he imitates them, either consciously or unconsciously. And besides this he hears story after story of cases of filial piety, and the idea of duty to his parents is drummed into him so constantly that at last it comes to take a firm hold on him as the one great obligation of life. That is, when he is small he regards his immunity from punishment as any other boy would and takes advantage of it. But as soon as he begins to understand the strength that lies behind the reserve of his parents, and to take in the meaning and force of filial duty and piety as it exists around him, he yields to these elements of his environment and they change his whole mental attitude.

IV. Imitative Play

Turning now to their imitative plays, we find the same ten-

dency to follow the doings of their elders that is found in the children of all races. The small boys bestride sticks and prance about in the most spirited fashion, perform various military maneuvres, and march to the sound of tin trumpets in imitation of the real soldiers. They also build houses and in various other ways copy almost every kind of activity of their elders. In some ways, the imitative part of the play of Japanese boys (and girls too) has a greater influence in education and character building than it has in the case of the children of our western countries. Reverting a moment to what was said in the preceding section, it seems to me that the whole idea of filial piety as *the* virtue par excellence, and its parent, ancestor worship, tend to foster imitation of one's elders both in children and in adults. The child is brought up to be a hero worshipper and is continually made to feel that this or that person, either living or dead, or perhaps some story hero, is to be imitated to the best of his ability. The result is that when his own childish instinct singles out some activity which commands his admiration he imitates it, just as the American boy does, but with a fervor that is unknown to the western lad. This characteristic is so powerful that the habit or faculty of imitation persists even in adults, and is regarded by all western people as a national trait, that trait by means of which the Japanese have been able to absorb so much of western culture in so short a time.

Among the games in which the child imitates the actions of animals, we find the same class of plays as our fox-and-geese and other similar games except there is not always supposed to be an imitation of ordinary animals. There are some games such as the one in which they imitate the dancing of the hares in the light of the moon where the imitation is as clear as anyone could wish, but the more common ones are those in which it is a sort of goblin or imp who is trying to catch the children, instead of a fox trying to catch geese. These games are called "Oni-goto" or "imp-games" and it may well be that these are examples of a name and an idea tacked externally upon what was originally an imitation of animals, for many of these games resemble the various kinds of fox-and-geese and tag very closely.

Among older boys and young men there is another class of amusements called sword-dances, which are connected with early events in Japanese history. In these one person imitates, more or less symbolically, some deed of ancient fame while some other person sings or chants the verses which describe the acts which he is supposed to be imitating. These are very popular and many young men are very skillful both in dancing and singing. They are indulged in most often at social gather-

ings where one or another is called upon to do something to entertain the company.

The masked dances performed at certain of the larger Shinto temples are all symbolically imitative. They are often very elaborate and are or were intended to please the deity before whom they were performed. The myths which relate to the sources of these dances make them wholly religious both in origin and significance, but it is probable that in some cases they are to some extent survivals of holiday dances, first performed partly as a religious rite and partly as play. One thing that adds color to this play is the fact that there are some other plays, such as the "Ball-catching" at one of the largest temples, which are and always have been simply big, joyous, boisterous celebrations, and yet are slowly coming under the dominance of the priests, and the winners of these contests are sure of the favor of the gods for the remainder of their lives.

V. Hunting Plays

This group of plays is somewhat less well developed among the Japanese than among the Anglo-Saxon races. The Japanese boys like to chase small animals, throw stones at dogs, cats and frogs, but are far less inclined to hunt for bird's nests or look for bugs than our boys are. Their games in general have far more of war than of the hunt in them, but they have a simple kind of hide-and-seek, and a sort of paper chase that resembles our western game of hare-and-hounds on a small scale. Blind-man's-buff is placed by some among hunting plays, and it may be that it is so psychologically, even in Japan, although their idea of the origin of it is that it is an imitation of the drunken antics of a certain hero of former days.

This lack of the hunting spirit in their plays probably has as explanation in the fact that the Japanese have always been and still are an agricultural people. Even during feudal times when hunting was encouraged as a martial exercise much as the tourney was in Europe, it was never a real sport followed for the love of it except in rare cases. So to-day the descendants of these tillers of the soil and these men who hunted from a sense of duty do not seem to care for this kind of recreation so much as their western contemporaries do. This does not mean that the Japanese do not hunt at all, for they do, but not to nearly so great extent as Englishmen and Americans. All this, of course, has its effect on the play of the children.

VI. Mental Rivalry and Games of Chance

In these matters we find kinds of contests similar to ours in

many cases. The Japanese uses dice some and is very fond of cards. He is as much inclined to bet on races and to gamble in other ways as any other human being, but his government has forbidden gambling in all its forms. In Japan this means real prohibition and hence I am unable to say any more as to the comparative intensity of the desire for this kind of recreation in the East and in the West. The Japanese is also accustomed to various forms of casting lots. One of those in most common use when it is necessary to select one man from among several is the following: A number of cords three or four feet long are twisted together and then each man in the group takes hold of one end of one of the cords. When all have done this, some one takes hold of the other end of one of the cords and the whole roll is loosened up and untwisted. The man who has hold of the other end of that particular cord is the man chosen. This was formerly the way in which the men at a jinrikisha stand settled the question as to who should take a passenger who came along and wanted to ride. At present, however, they go out by turns and this kind of selection by lot is seen only in the country districts.

Among children, instead of counting-out rhymes such as we have, the method in universal use is one based upon the three articles, a stone, a pair of scissors, and a piece of paper. The first is indicated by the closed fist, the second by two fingers extended, and the third by the flat hand. The stone can break the scissors, the scissors can cut the paper, and the paper can wrap the stone. If then, two children wish to try this, they stand facing each other and say, "Jan, kem, pon," and at the last word extend their hands, each indicating one of the things mentioned above. Necessarily one of them has made the sign of a weaker thing than the other and must yield. When more than two persons are in the group the matter becomes somewhat more complicated but is always the same in principle.

VII. The Destructive Instinct

The destructive instinct of a Japanese boy seems to be about on a par with that of the American, when he is small. He breaks his toys in much the same way and in general seems to enjoy it just as much as his western cousin. But when he grows older he seems to have less of the vandal spirit in him than most of our boys have. At any rate, I have seen less of throwing of stones at walls and fences simply for the sake of breaking them, or of breaking of glass and other things of like nature for pure pleasure in Japan than I have in this country.

In regard to the torturing of animals I can hardly say

whether the Japanese boy does this with a knowledge that he is causing them pain or not. But at any rate it is certain that they do torture bugs, dragon-flies, cicadas, crabs, frogs and toads more than American boys do. They capture the insects with bird-lime on long poles and then tie them on the ends of strings and keep them captive in this way. In the case of small animals they will not kill them for anything, but they will torture them to almost any extent. The idea of not killing any living thing is Buddhistic in its origin; but it has become a national trait, and a Japanese will let an animal suffer any agonies rather than put it out of its misery by killing it. This may have something to do with this side of the play of the children.

VIII. Teasing

The Japanese boy has a far less inclination to tease those about him than the American boy. He does tease the other members of the family once in a while, but by no means to so great an extent as we see it here in this country. And so far as his teacher is concerned, he practically never teases him. Once in a great while one may hear of some slight case of this kind, but teasing involves disrespect, and lack of respect for his teacher is a sin almost unknown to a Japanese boy. In any case it involves fun at the expense of pain on the part of another, and the whole people, adults and children as well, are averse to this sort of amusement. They enjoy jokes, but they are usually of such a kind as to be entirely without a sting for any one. Practical jokes are not unknown, but they are by no means so common as in America. It may be that some of this aversion to this form of fun arises from their innate politeness. A Japanese will tell a lie or at least will not speak in a perfectly straightforward manner any day rather than tell you an unpleasant truth unless it is a matter of great importance. Much more, then, would he refrain from teasing if it would cause you any pain.

IX. Courtship Play

In treating this subject of courtship play we must keep in mind the fact that all the relations between the sexes in Japan are typically Oriental or nearly so. Woman is essentially and necessarily the inferior of man. Even the small boy who speaks politely to his elder sister or to his elder or younger brothers, uses the same grade of language toward his younger sisters that he does toward the servants of the family, and the husband uses this same grade of language when speaking to his wife, although she must always speak to him very politely. During the earlier years of a boy's life this makes but little im-

pression on him and he plays with his sister or with other little girls more or less freely. But as he grows older his military games tend to increase that tendency of all boys to regard all girls as beneath them, and gradually he comes to recognize the meaning of the position of the women about him and to think that all men were made to command and all women to obey. This tells the tale of much of sex relation in Japan.

At ten or twelve years of age the boy is cut off from all his girl playmates, and has, therefore, none of the opportunities for courtship play or flirtation that the American boy has. The sex impulse, the source of all such activities, is crushed out or allowed to exercise itself in an illegitimate way only. But we must not conclude from this that no Japanese boy or girl knows anything of these things. It is true that the better class of young people do not, but having no legitmate place in good society, all such things as coquetry and the like are relegated to the intercourse of the courtesan and the "Geisha" and their admirers. The actions of these women, when viewed by Occidentals, are charming; they are innocent coquetry and nothing more. But to the Japanese youth who frequents the society of such persons they are solicitations just as much as the brazen acts of the woman of our slums. There may be a few exceptions to this in the case of a few of the higher class "Geisha", but they are rare. The reason for this is that they have neither of them, the men nor the women, become accustomed to such things in connection with the purer phases of social life. This shows itself in another way also. Many Japanese, especially those who are unfamiliar with western customs put a bad construction upon the acts of foreigners in their country when to western eyes there is absolutely nothing wrong whatever.

When we turn to courtship as we think of it, as the preliminary to marriage, the Japanese have none of it whatever. It has never been the business of the Japanese man to court the woman. The novels which he reads contain no record of brave deeds done for the approval of fair ladies. The chivalric attitude toward women had nothing to do with the valorous acts of the Japanese knight of the past, nor has it to do with the ordinary life of the young man of the present. He would think it entirely beneath him, or perhaps I had better say out of his province, to set out to win the love of a girl, except in very rare cases, and in those cases his way of doing it would seem very strange to us. The young people themselves have nothing to say in the matter; for it is all arranged for them by their parents and a "go-between", a practice which shuts out the possibility of any courtship before marriage, and after this

ceremony the wife is too much of a servant for there to be any kind of a marital substitute. This should not be taken to mean, however, that married couples in Japan do not enjoy mutual affection, for they do, but perhaps not in the same way as we.

Sometimes this repression only serves to intensify these instincts when they do get one of their rare chances to display themselves. The very care that guards the girls of the boarding schools and the way that these girls occasionally break out in spite of all such rules shows very clearly that the instinct of Eve is still strong and that the old Adam has not been entirely eliminated from the nature of the young man in spite of all his training. All the correspondence of the girls in such a school is read by one of the teachers, and in rare cases, with the consent of the parents, correspondence with a young man is allowed, though even in such cases the usual inspection is carried out. In some of these cases the letters show that if custom and usage had not put such a stern taboo upon courting the Japanese young man would not be far behind the American or the Englishman in the art.

Our final conclusion from all this then, is, that the Japanese baby is born with much the same instincts and tendencies to play that the Occidental baby is, and for the first few years the difference is only external. But as they grow older the Japanese boy meets an entirely different sort of environment from that encountered by the western lad, and as he begins to understand that environment he is modified by it to a greater or less extent. His play is shaped both externally and in its spirit in a way quite different from that followed by his cousins in America or England. But nevertheless some of the stronger and more fundamental instincts remain much the same in both, however different their ways of expression or repression may be.

University of Illinois, May, 1909.

LITERATURE

Civics and Health, by WILLIAN H. ALLEN. Ginn & Co., Boston, 1909. 411 p.

We have here an admirable presentation of this topic by an author who has long been connected with municipal research in hygiene. Its forty-one chapters are divided into five parts: the first, Health Rights, treats of health as a civic obligation, with seven motives and catch-words, which rights are and which are not enforced, etc.; the second part, entitled Reading Index to Health Rights, treats of mouth-breathing, contagious diseases, colds, diseased glands, eye-strain, ear trouble, malnutrition, deformities, dental sanitation, abnormally bright children, nervousness of teacher and pupil, health value of unbossed play, vitality, disease and statistics, the teacher's health; the third part, Co-operation in Meeting Health Obligations, treats of European and American Remedies, doing things at school, and getting things done, co-operation with dispensaries and child-saving agencies, school surgery and relief, physical examination for working papers during and after school age, health habits and industrial efficiency, industrial hygiene, last days of tuberculosis, the fight for clean milk, and humanized medicine; part four deals with the official machinery for enforcing health rights, such as the press, school health reports, the present organization of school hygiene in New York City and departments thereof; part five, on the Alliance of Hygiene, Patriotism, and Religion, treats of do nothing ailments, hereditary bugaboos and truths, ineffective and effective ways of combating alcoholism, whether it is practicable to present the whole truth and nothing but the truth, fighting tobacco evils, the patent-medicine evil, health advertisements, class instruction in sex, the elements of truth in quackery, and mental hygiene. The book contains perhaps a couple of score of photographs, curves, diagrams, and other illustrations, and is conveniently indexed.

The Daily Meals of School Children, by CAROLINE L. HUNT. Government Printing Office, Washington, 1909. 62 p. (United States Bureau of Education, Bulletin, 1909, No. 3.)

This is an advance publication of the Bureau of Education, May, 1909, and is an excellent summary of its subject. The first topic is the serving of food in schools, how it is carried out, the effect on backward children, the model lunch, factors of sociability, the ideal meal, push-cart, history of the movement, experiment of Methuen, space, training, preparation of lunches by various domestic science classes, high school lunch rooms, cost of food, and equipment. The next chapter takes up food, classifying it, discussing dietaries and amounts for different ages, suggestions for food, enlargement with growth, increase of nitrogen, fuel, foods, fruits and vegetables, mineral nutriments, whole wheat bread, eating between meals, characteristics of the various meals, the lunch box and its content, table habits, etc. The last section discusses the underfed child as the result of several investigations. Here the topic takes an international range and is very interesting. An excellent bibliography is appended.

A Study in Health Science, by M. J. KEANE. Telephone City Publishing Co., Brantford, Canada, n. d. 130 p.

This is a practical work discussing food, air, sun-light, exercise, rest, training, mechanical, chemical, nervous resistance, immunity, hereditary, idiosyncrasy, leanliness, order, temperance, dirt, bad habits, will, happiness, success. The book is simple, almost elementary and the headings of its chapters—maintenance, resistance, incident, etc.—seem a little factitious; but for the topics it treats and as far as it goes, the critic can have only hearty commendation. If this work, however, be compared with one which came to our table at the same time by William H. Allen, the latter must be given great pre-eminence.

Report upon the Physical Condition of Children attending the Public Schools in New South Wales (with special reference to height, weight and vision). WILLIAM APPLEGATE GULICK, Sydney, 1908. 66 p.

This is an interesting report of medical and anthropometric studies, with many interesting new diagrams, presenting in a rather ingenious way the results of labored researches. One surprising result is the range of local differences. The writers have very wisely compared their results with those obtained elsewhere, so far as they could be made a subject of comparison. In all there are 33,778 records of vision alone. On the whole this must be set down as one of the most careful and emphatic of all such reports and might well be regarded as an example for other studies in this field.

Some Random Thoughts and Reflections on the Methods and Uses of State Boards of Medical Examiners and their Relations to Medical Education and Students and to the State and its People, by P. C. REMONDINO. Frye & Smith, San Diego, Cal., 1908. 187 p.

Curiously enough these notes were suggested by a strange nightmare from which the author suffered, which was very vivid, and in which he met Rabelais, Luther, Sinbad, Captain Kidd, etc. In the second chapter, he discusses the father of British surgery, John Hunter, and other notables of his and later days. He then passes to a discussion of the differences between medicine as a science and an art, relations between medicine and surgery, etc. Then follow chapters on mistakes in medical education, a plea for individuality, etc. The French method in the eighteenth century receives one chapter, obstetrics another. General principles, boards of medical examiners, Dr. George Gould, personal rights, California Boards, views of Osler, Hæckel, Hadley, Huxley and leading journals are discussed, and finally, the causes of present confusion are explained.

The Medical Inspection of School Children. "The Medical Officer", London, n. d. 62 p.

This excellent little paper-covered handbook represents the best practical work that England has yet produced in this field. There is first a general scheme of inspection and its administration; then follow four chapters on examinations of skin diseases, of the eyes, ear, throat, nose, and the teeth, by four experts. The work is scientific and at the same time intelligible to any layman.

History of Common School Education, by LEWIS F. ANDERSON. Henry Holt & Co., New York, 1909. 308 p.

This is by far the best work we have in English on the topics which it treats. These are the schools of the Greeks, involving their

notions and practices concerning music, declamation, rhapsody, reading and writing, games, social rank of the teacher and grammarian, the palæstra, schools of philosophy, etc. Chapter II treats the schools of Alexandria, III those of Rome; then follows a transition period during the decline of Roman civilization, and the development of catechetical and cathedral schools, those of the Middle Ages in the days of the Renaissance, then the mediæval course of study including the trivium and quadrivium, in detail. The mediæval Church schools are next taken up and classified as to the methods of maintence; then follow beginnings of lay educational institutions, the rise of universities, and the intellectual movement, together with the development of the various faculties, the Renaissance, the Reformation—its effects upon the schools of England, the Classical schools of the sixteenth century, those of Sturm and the Jesuits, educational reformers, Rabelais and Montaigne, English schools of the seventeenth century, early colonial schools in America, Bacon, reforms of the seventeenth century, the non-conormist and naturalistic and preteritic movements, Pestalozzi, state systems, development of free secondary and advanced education in the higher school and university, the improvement in educational procedure, especially through Froebel and Herbart, the influence of evolution. It must be said that the early part of this work is far better than the later part, as well as far fuller. Indeed, the rubrics from about the beginning of Colonial Schools in this country on are extremely sketchy. The author has apparently done his best work in the mediæval period. Here his book will prove a God-send to all who use it, for it epitomizes much diligent labor.

A History of Education before the Middle Ages, by FRANK PIERREPONT GRAVES. The Macmillan Company, New York, 1909. 304 p.

This book intends to meet the demand for a reference and text-book that gives a comprehensive sketch of the history of education before the Monastic Schools arose. The author aims only to give sufficient material to mark the most significant movements and to discuss the underlying principles without entering deeply into details. It also seeks to stimulate the student to further research. Education is regarded as a species of conscious evolution. A brief account of the political and social history of each period is believed to be necessary. The first part treats non-progressive education among savages, barbarians, in Egypt, Babylonia, Assyria, Phœnicia, China, India, Persia, with general traits of the earliest civilization, in one hundred and nine pages. The second part treats the beginnings of individualism in education among the ancient Jews, Greeks, Romans; while the last chapter is devoted to the early Christians and the catechumenal Schools.

Readings in the History of Education—Mediæval Universities, by ARTHUR O. NORTON. Published by Harvard University, Cambridge, 1909. 152 p.

These readings in the history of mediæval universities are the first installment of a series planned to illustrate the subject from original sources. The data in the early part of this period are rather meagre. Nevertheless, the obvious criticism may be brought against this book that there are so many other topics, quite as worthy, that might have been selected. It is not quite clear in many places whether the author himself has gone to the original sources or has taken his data from other scholars who have. Some of the interesting topics are: Abelard, the works of Aristotle, Roman and canon law, theology, medicine and other university text-books. Then follow documents

illustrating university privileges, such as special protection, right of trial in special courts, exemption from taxation, privilege of suspending lectures, of teaching everywhere, and the influence of these privileges. Then follow extracts illustrating university exercises—the lecture, disputation, examination, etc.; then the requirements for the degrees in art at Paris, Oxford, and Leipzig; then certain academic letters relating to Paris and Oxford. A work like this cannot fail to have great interest.

Der Tanz, von MARIE LUISE BECKER. Hermann Seeman Nachfolger, Leipzig, n. d. pp. 210.

This interesting work is illustrated by a hundred and twenty-two cuts of many kinds, and treats the subject from many points of view. Dance as related to man, animals, races, is discussed. Dances in ancient Egypt, India and Greece, the dance of the satyrs and deities, of Theseus and Prometheus are described, then the relations of ancient dances to music, to mimesis and art, the principles of costume, etc. The author then passes to Rome, Pompeii, early Greek ages, the ancient North, the Salome dance a thousand years ago, Eastern customs, torch dances, ballets, dances in the Renaissance, in the seventeenth century, court ballets, the rise of the waltz, Mohammedan and Pacific Island dances, dances in Japan, among the American Indians, Czech dances, the cancan, minuet, etc. The author has little or nothing philosophical or psychological, and has not gone into research, but has written a very attractive book and shown excellent taste in the quality of the illustrations chosen to adorn her pages, taking them from a wide variety of fields.

Folk Dances and Games, by CAROLINE CRAWFORD. Barnes, New York, 1908. 82 p.

The dance fulfills about every requisite of ideal exercise, and develops the muscles and gives the acme of pleasurable motion together with the satisfaction of the æsthetic sense. This is especially true of folk dances, which are the ideal natural form of exercise. They are simple, pretty, enjoyable, and give the body control as nothing else does. There is a wave, a strong, high, and rising one, of popular interest in this subject, which the author here strives to meet. She has selected seven Finnish, eleven Swedish, five Scotch, five English, four German, one French, six Bohemian dances and gives a description of each together with the music. Sometimes there are words descriptive or otherwise.

A Manual of School Music in Elementary Grades, by FRANK R. RIX. The Macmillan Company, New York, 1909. 261 p.

This work is intended to help music supervisors, but especially class teachers. The former may profit from the experience of others, but the latter need definite instruction and plans, which tell them what to do every day. In the second part, these plans are found, based upon the grading of the work in New York City schools. The results are those of the author's experience and observation. He finds two widely divergent methods: the realistic and the idealistic. Apart from this, music is worth studying for its own sake. The topics in the first part are: ideals and aims, assembly singing, influence of music, pedagogy and methods, monotones, rote songs, essentials in primary grades, benefits of singing, defectives, responsibility of grade teachers, conferences, how to work, individual singing, voices of different kinds, enunciation, scales, ear training, various triads, fifths and octaves, rhythm and beats, syncopation, conducting, modulation, etc. The discussion, as will be seen from these titles, is essentially

on the technique. It would be interesting to know whether this author had even spent much time on the topic which is so disappointingly treated at the very outset, namely, ideals and aims. The question the pedagogic world wants to know is what music does for the child, and how it does it. It should not be considered as such a purely technical topic.

Spring and Summer Celebrations. Exercises, Recitations, Pantomimes, Tableaux, Drills, Songs for Easter, Arbor Day, Memorial Day, May Day, Fourth of July, and Closing day, edited by Alice M. Kellogg. Penn Publishing Co., Philadelphia, 1908. 208 p.

We have here one of the most excellent collections, mostly of poems, but with a few little dramas, for many kinds of school celebration. We have had a number of such collections, but this is by far the best that we have examined and stands out chiefly for the superior quality and taste shown by the editor.

Design for Schools. A Handbook for Teachers for Use in Secondary Schools, the Upper Standards of Elementary Schools, and Elementary Classes of Schools of Art, by CHARLES HOLLAND. Macmillan & Co., London, 1907. 177 p.

This is intended chiefly for the use of teachers, although it contains examples, suggestive of, or illustrating, elementary courses in design. The chief topics treated are, preparatory training in brush-work, how to obtain plants, a list of them, how to use them, can design be taught, drawing in outline, teaching of design, treatment of background and of the plane unit boundary. The work is copiously illustrated with on the average one or more designs on every page.

Children's Literature, by EVERETT SHEPARDSON. The Neuner Company, Los Angeles, 1908. 88 p.

These titles are arranged by grades, from one to eight. Then follow general references on the pedagogy of literature, story-telling, dramatization; while under the latter caption, the four following topics are worked out in detail: Paul Revere's Ride, King Cole and his Court, the story of the Pilgrims, and the Quest of the Holy Grail. The author, Everett Shepardson, is Supervisor of the Training School. He has done his work well.

Catalogue of Books in the Children's Department of the Carnegie Library of Pittsburgh. Carnegie Library, Pittsburgh, 1909. 601 p.

This catalogue contains the names of twenty-five hundred books, primarily compiled to help the children who use the Carnegie Library of Pittsburgh. It is hoped, however, that it will serve as a select bibliography of children's reading for the use of mothers, teachers, and librarians. It is based on ten years of conscientious study of literature for children and observation of the use of books by the children who frequent the various agencies of this library. In preparation, a tentative list of fiction was submitted to literary experts, and those on science revised by special lists. The annotations are for the use of children, the best being indicated by an asterisk. There are no books included published since the close of the year 1907.

Essai sur la Puériculture Locale. Thèse pour le Doctorat en Médecine Présentèe et Soutenue Publiquement en Juin 1907, par G. Armaing. Ch. Dirion, Toulouse, 1907. 53 p.

This thesis, although rather restricted to the environment of Toulouse, gives an interesting account of the various institutions for the protection of infancy, with orphanages, maternal societies, crèches,

young criminals, clinical and dispensary service, pupil colonies, excursions, the distribution of sterilized milk, diphtheritic pavilions, lying-in hospitals, the care of children in certain manufactories and industries, infant mortality, protection against tuberculosis.

The Century of the Child, by ELLEN KEY. G. P. Putnam's Sons, New York, 1909. 339 p.

This book has gone through fourteen German editions and has been published in several European countries. Since the author dropped her relations with the women's emancipation movement, some twelve years ago, by asserting that woman's salvation depended upon a nobler conception of woman's duties as wife and mother rather than the enlargement of her sphere outside or about any other centres, she has devoted herself chiefly to educational questions. And, like all highly original minds, some think her revolutionary; but even to these she is extremely stimulating. The contents of this book will be indicated by the chapter heads: the right of the child to choose his parents; the unborn race and women's work; education; homelessness; soul murder in the schools; the school of the future; religious instruction; child labor and the crimes of children.

Ueber die Voraussetzungen zur Möglichkeit einer sexuellen Moral, von DR. F. SIEBERT. Otto Gmelin, München, 1909. 54 p.

This work bears the sub-title, National Education and Sexual *Éclaircissement* and is based on a lecture given to Munich students. The first part of the book is devoted to the subject given above in the caption; and the last part of it is under the second title. It is a convenient *résumé* of a movement that has already in Germany acquired great momentum.

Frauenbewegung und Sexualethik, von DR. GERTRUD BAÜMER and others. E. Salzer, Heilbronn, 1909. 176 p.

This work bears the sub-title of Contributions to the Modern Criticisms of Marriage, and is made up of nine articles by as many different women. The topics are: the modern problems of morality, the fundamental principals of sexual ethics, the feministic anarchy of thought, the new ethics a hundred years ago, the relations of the woman movement to modern criticism of marriage, marriage and free love, ethics and eugenics, the protection of mothers as a problem of social politics, prostitution as a social-ethical problem.

Husband and Wife, by LYMAN B. SPERRY. Fleming H. Revell, New York, n. d. 228 p.

This is "a book of information and advice for the married and the marriageable." Its chapters are as follows: legitimate objects of marriage; requisites for satisfactory marriage; the organs and functions of reproduction; puberty, ovulation and menstruation; love, courtships and engagements; weddings and wedding journeys, physiological marriage, or love's consummation; the relative amorousness of males and females; children, yes or no?—if not, why not? The limitation of offspring: prevention; abortion, infanticide; impotency, sterility and inadaptation; conception and pregnancy; the predetermination of sex; heredity, prenatal impressions, "mother's mark"; the menopause, or "change of life" old age and sexuality, or decline of virility in males. It is a very plain spoken book and is the best the author has yet written. Very many, though not all, of his counsels seem wise; but as is usual with such books, it is too diffuse and perhaps no one would entirely agree with his views.

Les Crèches. leur Passé, leur Présent, leur Avenir. Étude d'Hygiène Sociale, par le Docteur René Deswarte. A. Michalon, Paris, 1906. 170 p.

This is a Paris thesis, but one of the interesting, comprehensive kind that goes into the subject with considerable thoroughness, with a copious bibliography, but limited, as is so usual among French students, almost exclusively to works in French. Strangely enough, there is no kind of a table of contents. But the author discusses infant mortality, gives the history of his topic, discusses crèches of different ages, follows the extension and development of the movement, and then describes its present condition, the industrial crèche, the crèche of the future, those with kitchens, and those connected with various industries. It is an excellent account, and though much more comprehensive than the work of Armaing, is nevertheless too restricted in its range.

Die Kindersprache, von Clara und William Stern. J. A. Barth, Leipzig, 1907. 394 p. (Monographien über die seelische Entwicklung des Kindes I.)

Here we have a very valuable monograph which will be of great service to all students in this field. In the first part, the authors describe the speech development of two children during the first, second, third, and finally the fourth to the sixth year. The son and the daughter are treated separately, In the second part, beginning with page 121, the authors treat of the psychology of the language of childhood: its causal problems, beginnings, the one-word stadium, growth of the sentence, the chief factors of the development of words, the parts of speech, the development of differentiation, parallel between the development of the race and of the individual. The third part is devoted to special linguistics of children's language and considers word changes and mutilations, such as elision, assimilation, metathesis; and a special chapter is given to lull words, another to imitation, still another to original creations, to compositions, derivations, and child etymology. There are very many tables and an admirable bibliography and index. The writers have compared their own observations in detail with those made by others.

Proceedings of the Second Annual Playground Congress, New York City, Sept. 8-12, 1908, and Year Book, 1908. Published by the Playground Association of America, 1 Madison Avenue, New York, 1909. 456 p.

This Congress was attended by representatives from thirty-one states, from several foreign countries, and delegates from many cities. It is impossible to describe these many addresses in detail, several score in all. They are, however, of the very greatest interest for all those concerned with this problem, which is now so central in the minds of students of education. The sudden prominence of the problem, the large Sage endowment, the sudden appropriation of large sums, and the addition of extensive grounds have all contributed, if not to bring the subject into too great prominence, nevertheless to undo a great deal of the neglect which has marked the past.

The Modern Child, compiled by Hervey Elwes. Foulis, London, 1908. 246 p.

This little volume is a selection of extracts, rather more prose than poetry, from various modern authors, several score in number, about the child. They are grouped under the general captions: childhood, parents, babies, the nursery people, naughtiness, frightening things, little girls, boys, grown-ups, lessons, out-of-doors, little invalids, sea-

side children, religion, entertainments, London, children's books, Christmas, lost awhile. The selections seem admirable. The compiler is evidently a very discriminating lover of childhood.

Third Annual Report of the President and Treasurer, Carnegie Foundation for the Advancement of Teaching, 1908, 211 p.

The annual reports of the president grow in value and this will be read with interest by everybody interested in college and university administration, and need not here be reviewed at length. It is a significant sign of educational thought in our times that it seems in so many ways directed toward the administrative side. We see this in the studies of school administration, the functions of the superintendent, the discussion of schedules and reports, comparisons of the methods of different cities, etc. This feature is strongly marked in this report. There is a growing conviction that our colleges and universities have been often lax in their financial methods, partly owing to their poverty, but chiefly owing to the fact that they have been administered from pedagogical rather than from a business point of view. The recent volume of Birdseye entitled "The Reorganization of our Colleges" insists more strongly than any other upon the desirability of greatly enlarging the official force that deals with accounts, not only investments and sources of income, but with expenditures of all kinds. Very many blanks have been suggested with the effort to test the efficacy of fellowships, methods of instruction, apparatus, all forms of supervision of student life, etc. It is idle and foolish to disclaim against this tendency as mechanical, or as the dawn of trust, corporation, or factory principles, as applied to higher institutions of learning. The tendency in this direction may be made of great service, provided only that it becomes subtle and complex enough to evaluate every kind of merit and do ample justice to every beneficent individual variation, and to leave academic freedom in its broadest sense unimpaired. A high-priced professor, whom the writer has in mind, who lectures three hours a week but spends seventeen in the preparation of each lecture is not to be marked as more inefficient than one who spends twenty-four hours weekly with his class. Moreover, it is difficult to estimate the value of original research, which certainly cannot be weighed, measured, or in any other way qualified. It is encouraging to mark that this tendency recognizes more and more the clear line of necessary demarkation that is coming to recognition between the work and function of the college and that of the university, which from the first have been recognized at Clark and by the Johns Hopkins as nowhere else.

Addresses and Papers, by ANDREW S. DRAPER. State Education Department, Albany, N. Y., 1908-09. 180 p.

We have here the recent utterances of the Commissioner of Education of the State of New York, who discusses rational limits of academic freedom in a way which will make professors who are extreme believers in academic freedom tear their hair, and well calculated to provoke some statement by a man who knows what real academic freedom is. In the article on desirable uniformity and diversity, the author, of course, while making concessions to diversity, is a uniformitarian. He believes in democracy in American universities, in adaptation of the schools in industrial efficiency including agriculture, but especially in organization which is necessary and for which he has undoubted talent. To our mind, one of the greatest educational issues now pending, or liable in the near future, is the issue between liberty and spontaneous variation on the one hand in state, city, and town systems and in rooms under individual teachers,

and on the other the collaboration of everything that the system does, on business principles. In this issue there is no mistaking the position this educator by training, habit, by his antecedents, his temperament, and his experience will occupy.

Report on Kindergarten Work Abroad, Prepared Under the Direction of The Froebel Society. 283 p.

This report is based on the results of an inquiry undertaken by the Froebel Society by the method of questions sent to the central office of different countries. Of these 103 schedules were received from foreign countries and British colonies. This has been carefully summarized and a few special schedules have been given. The countries most fully treated are Austria-Hungary, Denmark, Egypt, Finland, France, German Empire, Ireland, Italy, Japan, Norway, Sweden, Russia, Switzerland, United States and British Colonies. It is very wholesome to see in these various countries of the different conceptions existing of the nature of kindergarten work, hence in our own country, where this work is taking a somewhat uniformitarian drift, such a work cannot fail to be very wholesome reading.

Grundriss der Psychologie für Pädagogen, by Otto Lipmann. Barth, Leipzig, 1909. 100 p.

A succinct, characteristic German text-book designed for teachers who can devote but little time to psychology, it is, nevertheless, worth readingbecause of the illumination of the conventional topics of the subject by constant reference to the results of experimental child study upon which the following points are based. The attention span in childhood is shorter than in adults and the apperceiving mass for new ideas is smaller. Misstatements of children, often considered lies, may be cured by cultivating greater accuracy in observation and description. The presence of an "over idea" is essential to forming and grouping concepts. Cognizance should be taken of the different ideational types, but the mixed one is the aim of education. In learning verbally, the content must be understood first, the method of memorizing by wholes is recommended with divisions into parts suitable for one sitting, and also the grouped rather than continuous repetitions with a quick tempo after the first mastery. Pleasant feelings, especially self-feeling, promotes learning while unpleasant hinders. Play develops the former, building up a feeling of self-trust. Collective or class work is more effective, due to imitation and system. Self-control is the end of education and the self he conceives to be the sum or complex of the norms composing the individual. Interest is necessary for learning as insuring receptivity and lessening fatigue. A programme with the order of easy, difficult, and easy in the session is most economical of time and energy. Practice is invaluable even in learning to be moral, though a true moral act is always a special adaptation to a given situation. Lastly, children should be tested on the basis of intelligence and educated as far as possible according to their peculiar needs. L. Pearl Boggs.

Gulick, Luther Halsey and Ayres, Leonard P., Medical Inspection of Schools, N. Y., Charities Publication Committee. 276 p.

The cost of the investigation which made this book possible was borne by the Russell Sage Foundation, and the book itself if nothing more were done would go far to justify the existence of that fund. The book gives a complete account of the work done in this country in the medical inspection of schools, besides typical accounts of work done in German cities and in England. Its aim is in no respect

theoretical. It simply states the present conditions in this country and points out some discrepancies in ways of getting data as well as the defects. It gives the cards and report blanks used by the cities with the best systems, states in full the Massachusetts law; prints the circulars issued by the Massachusetts Board of Health describing the symptoms of various diseases and the ways of examining children, and altogether is an invaluable book for any one who intends to establish any system of medical inspection. There is also an excellent bibliography. The one criticism which might be made is that a fuller account was not given of medical inspection in European countries, since it is much completer than in our own and would serve to set a standard for us. It is to be hoped that this will be done at a later time. AMY E. TANNER.

The Greatest Life, by GERALD LEIGHTON. Duckworth & Co., London, 1908. 275 p.

The author's standpoint is that of organic evolution or adaptive change. It contains no theology. The author acknowledges great indebtedness to Archdell Reid. In discussing what is the greatest life, the author describes the various factors involved in making a man—physical, moral, mental—the effects of age, emotions, environment, etc. The soul may be perhaps a sudden rather than a gradual manifestation. There is a chapter on moral, mental, and spiritual immunity and susceptibility, with racial and individual differences. Immunity is discussed from the standpoint of alcoholism, tuberculosis, measles, etc. Opium, physical agencies like air, climate, the making of a man's mind, are discussed with detail and interest. "immunity" is perhaps the greatest word of the author; and one of his best chapters is on immunity in religion. We are told that Christ used both the curative and the preventive method.

The Rat Problem, by W. R. BOELTER. Bale, London, 1909. 165 p.

Here we have one book of the kind that the editor of this journal has long and reiteratedly expressed a desire to see: namely, a book devoted to the natural history of a particular form of life, which we hope will be followed by books of the same kind on the dog, cat, monkey, and many other forms. We wish, however, in addition to the material herein contained, that there was also something of a rudimentary natural history of the rat, the evolution of the species, and the development stages of the individual with a glimpse of its anatomy. The book is copiously illustrated. The chapters are as follows: natural history of the rat, on the economic loss caused by rats, on the rôle played by the rat in the dissemination of disease, on the means for the extermination of rats. There are in all seventy-five illustrations.

Official Report of the Federal Conference on Education, 1907. League of the Empire, London, n. d. 384 p.

After describing the organization of the meetings, delegates, opening ceremonies, and the division of the meetings, we have here reports of the official and general conference, the opening and the sectional meetings. The latter are as follows: university, history, technical, training of teachers, museums, nature study and English sections. Then follows an account of the exhibitions, social engagements, etc. Some of the interesting topics at the opening meeting were interchange of teachers, agricultural education, connection between elementary and secondary schools, universities and the empire. Many of the papers are devoted to educational problems in the colonies. On the whole, this is an interesting and valuable contribution to the subject.

Report of the Commissioner of Education. Government Printing Office, Washington, 1908. Vol. I.

After these many years of belated annual reports, it is very refreshing to receive a report for the year ending June 30, 1908. Besides the interesting introduction of the Commissioner on current topics, there are chapters on recent educational legislation; education in Porto Rico and the Philippines; the modern aspects of higher education in Spanish American countries, Great Britain, Ireland, France, central Europe; foreign current topics; universities and other foreign institutions of higher education, in 1907.

Industrial Arithmetic Problems, by MARY L. GARDNER and CLEO MURTLAND. Manhattan Trade School for Girls, New York, 1908. 53 p.

This is an interesting new departure made at the Manhattan Trade School for Girls. The arithmetic is based entirely upon industrial processes more or less connected with that school. They are novelty problems—sample-mounting, pasting, bills and receipts; millinery—trade problems, bills and receipts; sewing—trade problems, bills and receipts, gymnasium suits, tucking, ruffling, quantity of material; store problems; operating—time problems, straw sewing, bills and receipts; incomes; New York City—factory sewing, industries, sweat shop work, population, trade schools; miscellaneous problems; problems on textiles—cotton growing, ginning, mills, imports and exports; wool growing, manufacture, imports and exports; silk culture, manufacture, importation; flax.

Women's Work and Wages, by EDWARD CADBURY, M. CÉCILE MATHESON, and GEORGE SHANN. University of Chicago Press, Chicago, 1907. 368 p.

This publication of an American edition of this work is said to be due to the great paucity of accuracy and information concerning the employment of women. There is almost always a complete division of labor between men and women, in accordance with which men do the heavier, more interesting, and better paid work. Thus it is impossible to compare wages on any fair basis. Under the caption, women's work, four chapters discuss respectively legislation, general conditions of work, wages, and outwork. Under women workers, are dicussed wages and expenditure, life in the factory, rules and discipline, married women and the home, social life of unmarried women. Under improvements—present and possible, are discussed women's trade unions, girls' clubs, classes, etc., national minimum, wages, boards, conclusion. An appendix contains a table of trades and weekly wages of women workers, tables relating to age and marriage, weights and measurements of girls after athletic training, wages, board bills, specimens of investigation cards used for inquiry into individual cases.

The Chemistry of Commerce, by ROBERT KENNEDY DUNCAN. Harper & Bros., New York, 1907. 263 p.

Under catalysis the author discusses how a phenomenon recognized anew may affect many industries. Then comes the problem of the fixation of nitrogen; then, in sequence, a study of the rare earths, illustrations of how substances of a merely academic, have suddenly become of practical importance; other chapters are on high temperatures—their dangers, etc., types of crude and wasteful traditional industry, industrial alcohol, floral perfumes, the making of medicines, the new microbe inoculation, cellulose, and finally there follows the author's unique scheme of industrial fellowships by which a manu-

facturer, by contributing money to a university to support a fellowship, can have his problems solved for him cheaper than in his own establishment, can maintain his secrecy, benefit the university and fellow, etc.

Six Orations of Cicero, Allen and Greenough edition, revised by J. B. Greenough and G. L. Kittredge, with special vocabulary by J. B. Greenough. Ginn & Co., Boston, 1909. 226 p.

This does not supersede these author's revised edition of Cicero but has been prepared merely to meet the needs of those teachers who prefer marked quantities and who require but six orations for use in their schools. The orations are arranged chronologically, but those against Catiline are annotated most fully.

Mothers in Council, by ELLEN M. MCDOUGALL. Robert Culley, London, n. d. 295 p.

This book consists of twenty-four practical talks to mothers. The following are sample topics: the model housewife, a school for mothers, food and feeding, before marriage and after, anger, how to use Sunday, games and holidays, a proper child, what shall we do with our girls?, the protection of girls, out of doors, a healthy mind, gentlefolk, a good complexion, lady day, God's call to emigration, the dawn of motherhood, Easter day, Mrs. Comfort's front parlor.

Tales of the Caliphs, by CLAUD FIELD. John Murray, London, 1909. 118 p.

It is a question on which experts differ, whether or not Islamism can be reformed without being exterminated. Whether optimist or pessimist, however, all who have felt the strange spell of the religion founded by the Arabian camel-driver will be interested in these short sketches of the Caliphate in its palmy days, when Europe was slowly emerging from barbarism. These tales are taken from a work of Masoudi, of which Renan says: "In the vast field of Arab history and polygraphy, there is no more instructive book." It is a garland of anecdotes and disgressions.

Ancient Tales and Folklore of Japan, by RICHARD GORDON SMITH. A. and C. Black, London, 1908. 361 p.

These stories are transcribed from voluminous, illustrated diaries kept by the author during twenty years of travel and support in many lands. Nine of the fifty-seven are exclusively Japanese so far as is known, but all of them are found in Japan. The illustrations, sixty-two in number, add materially to the worth and attractiveness of the book.

William Godwin und Mary Wollstonecraft, von HELENE SIMON. C. H. Beck'sche Verlagsbuchhandlung, München, 1909. 168 p.

Here we have an interesting study of affinities. The life and traits of each are first described, and then their relations to each other: their love, marriage, their daughter, the decline of their fortunes, and their death.

Following the Color Line, by RAY STANNARD BAKER. Doubleday, Page & Co., New York, 1908. 314 p.

This book was written to show the exact present conditions and relationship of the American negro in American life. Most of his chapters have been published in magazines, and the book consists of fourteen, grouped into three parts, viz.: the negro in the South, in the North, and in the nation. There are a dozen or more interesting illustrations scattered through the book.

The Making and the Unmaking of a Dullard, by THOMAS EDWARD SHIELDS. The Catholic Education Press, Washington, 1909. 296 p.

In the present volume, this interesting author, who is perhaps the best informed and modern writer on educational topics in the Catholic church in America, describes in thirty-five dialogues the substance of modern knowledge concerning the education of defectives. His study of the dullard "is based on a thorough psychological insight; but what is more important, it is evidently inspired by a hearty sympathy for parents and teachers upon whom the care of such children must devolve." The dialogue form allows the various view-points of controverted topics in this field to be presented graphically.

Guide to High School Observation, by GUY MONTROSE WHIPPLE. C. W. Bardeen, Syracuse, 1908. 41 p. (Cornell Study Bulletins for Teachers, No. 2.)

This directs how to observe the high school teaching as it is now required of college students of education in the State of New York, where each candidate must spend twenty hours in observation of school work actually in process and put it down in a note-book. It is not expected that all the questions here can be answered. Attention is called to observations of programme, curriculum, attendance, organization, psychological principles of teaching, discipline, control, moral training, observation of classes in foreign languages,—Latin, German, Greek, French,—English, elocution, rhetoric, composition, history, civics, mathematics, chemistry, physics, biology, botany, human physiology, physical geography, and geology.

John Brody's Astral Body, by C. W. BARDEEN. C. W. Bardeen, Syracuse, 1908. 195 p.

This is another interesting contribution of Mr. Bardeen, who is considered the Tolstoi of American school teachers. No one has described in romance so many of the aspects of teachers' life in this country as he. This contains the following six stories — John Brody's astral body; The teacherette; Her mother's daughter; In the clouds; When Greek meets Greek; Bumptious Bill.

The Chaucer Story-book, by EVA MARCH TAPPAN. Houghton, Mifflin & Co., Boston, 1908. 215 p.

Some have lately thought the difficulty of reading Chaucer has been overestimated. It is certainly harder than Beowulf. It would also be better if every one would read it as the author wrote it. In fact, no one without preparation, ever read the Canterbury Tales for pleasure. The twelve stories here chosen are those requiring the fewest omissions to adapt them to the taste of the present day. The selections are perhaps the best that could be made, and they are told in straightforward, simple English.

Fundamental Facts of Elementary Physics, by C. W. BARDEEN. C. W. Bardeen, Syracuse, 1908. 198 p.

This little handbook, which is illustrated by seventy-four cuts, appears to us a praiseworthy attempt to simplify physics to the comprehension of children younger than those to whom it is usually taught. It contains only a moderate amount of mathematics and seems, on cursory inspection, to be a model of condensation.